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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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MICROFLORA OF OATS FROM MINNESOTA AND NORTH DAKOTA

Ian W. Tervet

Seed lots of oats were obtained from several stations in Minnesota and North Dakota[1]. Since the rust and smut-resistant varieties, Vicland and Tama, are becoming widely grown, samples of these varieties were obtained from as many as possible of the branch experiment stations in Minnesota and North Dakota. Gopher oats was obtained also from many stations to provide a comparison with the newer varieties while a Bond x Anthony selection (Minn. No. 473), grown at the 6 experiment stations in Minnesota also was examined. This selection was included because of the probability that oats derived from Bond crosses will become widely grown in the Upper Mississippi Valley within a few years. Besides these samples, 32 Minnesota lots, 28 of them Vicland and 4 Tama, were obtained from the Seed Laboratory of the Minnesota State Department of Agriculture.

Samples consisting of not less than 100 seeds were plated from each of these lots. These seeds were disinfected by placing for 3 minutes in a solution consisting of 0.1% mercuric chloride and 0.3% Vatsol O.T.C. in water followed by 2 washes in running water. The seeds were then placed in a solution of 0.35% sodium hypochlorite and 0.3% Vatsol O.T.C. in water for 5 minutes and plated on acid potato dextrose agar (±pH 4.0). A 5-minute dip in sodium hypochlorite, of the strength given above, was used on the varieties from the Minnesota experiment stations to determine if this weaker disinfection was satisfactory, but Rhizopus nigricans developed from some of the seeds, making some plates impossible to read. The comparison of the results obtained with the 2 methods of disinfection is given in Table 1, the principal differences regarding known pathogenic fungi being in the greater frequency of isolation of Helminthosporium spp. following hypochlorite disinfection.

Alternaria spp. were the predominant fungi on the seeds from the Minnesota experiment stations (Table 1). However, many of these samples were also heavily infected with Aspergillus niger, A. glaucus, and Penicillium spp., in most cases a higher percentage count being obtained after mercury-hypochlorite disinfection than after hypochlorite alone. A maximum of 23% Gibberella saubinetii [G. zeae] was found on the Vicland sample from Morris after hypochlorite disinfection but only 2% after mercury-hypochlorite treatment. The Morris station gave the highest Gibberella readings and Duluth the lowest. Helminthosporium avenae was most severe in the Duluth samples, both methods of disinfection giving many infected seeds. Other species of Helminthosporium, principally H. sativum, were obtained at all stations, in most cases a higher reading being obtained with hypochlorite than with mercury-hypochlorite. There did not appear to be any consistent differences in microflora on the different varieties tested.

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1 The writer expresses his gratitude to H. K. Wilson and R. G. Robinson of the Dept. of Agronomy and Plant Genetics, University of Minnesota, for supplying the oat samples grown at the experiment stations of the University of Minnesota, to W. E. Brentzel of the North Dakota Agricultural Experiment Station for the North Dakota samples, and to Jack Larson, of the Minnesota State Department of Agriculture Seed Laboratory for the many samples from Minnesota.

The samples from the North Dakota stations gave rise to a high percentage of Alternaria spp. Gibberella saubinetii was not found on any seed and only one lot, Tama from Edgeley, showed any infection by Helminthosporium (H. sativum). Fusarium spp. were not uncommon, the seed lots from Edgeley having an average of 10%, and the Vicland from Langdon having 12% of the seed so infected.

In addition to the samples from the experiment stations in North Dakota and Minnesota, 32 samples were obtained from the Minnesota State Seed Laboratory. The majority of these samples were submitted by farmers and represent for the most part the type of seed that will be sown in Minnesota this spring. Alternaria spp. were common on all lots of seed that germinated satisfactorily; on those lots with poor germination (samples from Cass, Sherburne, Cottonwood, and Martin Counties), Aspergillus spp., Pencillium spp. and other fungi associated with seeds that have heated in storage, replaced the Alternaria in large measure. Helminthosporium spp. did not account for any large part of the microflora, a maximum of 11% H. avenae being produced on one seed lot from Polk County. Several lots were not infected with Helminthosporium spp. The seed lot from Lyon County had the maximum infection of Gibberella saubinetii (11%) while Fusarium spp. were found on most samples, a maximum of 11% developing on the Benton County sample (Table 3).

Greenhouse tests were conducted with the samples from the experiment stations in Minnesota and North Dakota. One hundred seeds of each lot, treated with a surplus of Semesan Jr. (1% ethyl mercury phosphate) and the excess sifted off, were planted adjacent to a row of 100 untreated seeds. The tests were conducted in unsterilized sand, and the greenhouse temperature being about 25° C. Little difference was observed in the stand of treated and untreated seed (Tables 1 and 2) and in the North Dakota samples a slightly decreased stand occurred with treatment.

Seedling blight developed in 2 of the Minnesota seed lots, in the untreated rows of the Tama sample from Crookston and the Gopher sample from Waseca. This blight was evident on a few seedlings 7 days after planting and adjacent seedlings showed symptoms within the next 2 days. The tips of the leaves turned red, then gray, the plants becoming flaccid. Infected plants were killed within 48 hours after the first symptoms. The mesocotyl was completely rotted and adventitious roots did not develop. Isolations from infected plants gave a fungus that was thought initially to be a species of Pythium, but which has not yet been positively identified. The symptoms resembled those described by A. R. Downie (M.S. thesis, University of Minnesota, December 1940). Infected plants soon appeared in most of the Minnesota samples, being most numerous in the untreated rows. At the end of 14 days the seedlings were removed from the bench and examined. Many seedlings that did not show any symptoms on the leaves were found to have the mesocotyl infected. In such infected plants, few adventitious roots developed and the adventitious roots that did invariably were infected. Relatively few seedlings in the untreated rows from Waseca, St. Paul, Morris, and Crookston were free from lesions on the mesocotyl and adventitious roots. In Table 1, the number of healthy plants found 14 days after planting and the number of seedlings killed by blight are given; the difference between the number of plants emerged and the sum of healthy and dead plants gives the number of seedlings with mesocotyl lesions but no above-ground symptoms.

Table 1. Microflora of seeds of 4 varieties of oats from different stations in Minnesota and response of the seeds to treatment with ethyl mercury phosphate. (For footnotes see page 701).

Variety and place of origin	Percentage seeds infected with fungi[a]							Seedling stand 14 days after planting[g]					
	Helmin-tho-sporium avenae	Helmin-tho-sporium spp.	Gibber-ella	Fusar-ium	Alter-naria	Miscel-lan-eous[b]	Steriles	Not treated			Treated		
								Total	Healthy	Dead	Total	Healthy	Dead
Waseca													
Gopher	0 (2)	4 (13)	0 (2)	0 (0)	56(67)	40 (5)	0 (11)	94	17	43	98	52	11
Tama	0 (2)	4 (6)	0 (3)	0 (1)	47(85)	49 (1)	0 (2)	97	43	8	96	70	1
Vicland	0 (4)	12(10)	3 (6)	1 (4)	51(73)	33 (2)	0 (1)	91	34	9	100	81	0
Minn. #843	0 (0)	0 (0)	10(9)	3 (3)	36(91)	48 (0)	3 (3)	84	20	11	92	25	7
St. Paul													
Gopher	21(3)	2 (2)	2 (2)	1 (2)	52(74)	13(17)	9 (0)	96	52	5	95	76	4
Tama	5 (48)	3 (8)	2 (1)	0 (7)	63(48)	7 (3)	20(0)	98	41	11	93	82	0
Vicland	1 (4)	4 (5)	1 (1)	1 (2)	61(62)	5(28)	27(0)	88	24	3	94	66	2
Minn. #473	0 (0)	15(0)	1 (0)	6(98)[c]	51(2)	14 (0)	13(0)	89	45	0	96	83	0
Morris													
Gopher	0 (1)	3 (11)	4 (12)	0 (6)	18(70)	72 (0)[f]	1 (0)	100	59	10	97	86	1
Tama	0 (0)	15(15)	3 (0)	0 (0)	67(81)	13 (2)	2 (1)	92	44	12	98	80	0
Vicland	4 (0)	13(26)	2 (23)	2 (4)	51(47)	16 (0)	2 (0)	96	78	0	100	81	0
Minn. #473	1 (0)	7 (29)	6 (5)	3 (0)	48(66)	33 (0)	6 (0)	96	52	5	95	76	4
Crookston													
Gopher	0 (0)	6 (14)	1 (1)	0 (0)	32(84)	61 (0)	0 (1)	88	9	27	97	27	15
Tama	0[d](0)	0 (5)	0 (0)	0 (0)	19(1)	76(99)[e]	0 (0)	85	29	25	97	83	0
Vicland	2[d]	8	0	2	20	68	0	96	69	5	96	96	0
Minn. #473	0 (0)	3 (0)	1 (1)	0 (0)	5(0)	91(99)[f]	0 (0)	70	58	1	77	74	0
Grand Rapids													
Gopher	8(45)	11(15)	12(1)	2 (2)	48(8)	1(4)	18(15)	93	93	0	94	94	0
Tama	0(16)	6 (22)	5 (6)	2 (8)	40(46)	4(0)	45(2)	98	90	0	96	77	0
Vicland	4(11)	2 (13)	6 (6)	1 (1)	40(62)	1(2)	43(5)	100	93	0	98	85	1
Minn. #473	0[d]	9	2	5	57	10	17	95	62	0	93	87	0
Duluth													
Gopher	47(54)	0 (4)	0 (0)	0 (0)	12(6)	5(0)	36(32)	91	81	0	97	96	0
Tama	20(34)	6 (0)	0 (0)	0 (1)	17(10)	27(0)	29(56)	100	80	0	100	98	0
Vicland	6 (18)	0 (26)	7 (4)	0 (2)	54(42)	23(2)	10(6)	97	95	0	100	100	0
Minn. #473	25(22)	0 (0)	0 (0)	3 (0)	24(30)	15(4)	33(44)	91	76	0	91	86	0

Footnotes for Table 1.

[a] The figures of percentage seed infection refer to the results obtained following different methods of seed disinfection: the first refers to the data obtained when seeds were surface disinfected by immersion in mercuric chloride, followed by sodium hypochlorite; the second, in ( ), to the information obtained after seed disinfection with sodium hypochlorite alone.

[b] The principal fungi grouped under Miscellaneous are Aspergillus spp. (A. glaucus and A. niger for the most part) and Penicillium spp. Occasionally Mucor spp., Phoma spp., and some types not identified are included.

[c] Fusarium oxysporum.

[d] Because of rapid and extensive development of Rhizopus nigricans on seeds that had been plated following a sodium hypochlorite treatment, it was not possible to determine with any degree of accuracy the microflora of the sample.

[e] Penicillium spp.

[f] Aspergillus niger, A. glaucus, and Penicillium spp.

[g] 100 seeds planted per row. Figures actual count of seedlings.

Table 2. Microflora of seeds of 3 varieties of oats from different stations in North Dakota and response of seeds to treatment with ethyl mercury phosphate.

Variety and place of origin	Percentage seeds infected with fungi: Helminthosporium spp.	Fusarium	Alternaria	Miscellaneous	Sterile	Seedling Stand[a] Not Treated	Treated
Edgeley							
Gopher	0	8	74	4	14	100	96
Tama	1	7	75	1	16	95	98
Vicland	0	16	69	4	11	95	99
Dickinson							
Gopher	0	3	57	3	37	99	97
Tama	0	0	58	3	39	92	99
Vicland	0	1	70	2	27	100	97
Williston							
Gopher	0	0	71	5	24	91	88
Vicland	0	0	63	2	35	97	91
Langdon							
Vicland	0	12	82	1	5	97	91

[a] 100 seeds planted per row; figures actual seedling count.

Table 3. Microflora and percentage germination of seed lots of oats from Minnesota.

Seed lot source District and County	Percentage seeds infected with fungi: Germination[a]	Helminthosporium avenae	Helminthosporium spp.	Gibberella	Fusarium	Alternaria	Miscellaneous[b]	Sterile
North-west								
Clay	98	6	6	1	2	53	2	30
Marshall	96	0	0	0	1	30	3	76
Polk #1	88	11	1	2	2	60	2	22
#2	96	4	8	1	7	64	1	15
Roseau	98	0	6	1	3	33	2	55
North-central								
Cass	30	1	1	0	0	4	32[c]	62
West-central								
Chippewa	98	3	5	2	2	64	3	21
Lac qui Parle	96	0	0	2	3	75	1	19
Swift #1	95	0	1	0	1	94	1	3
#2	96	1	0	1	3	88	0	7
Traverse	97	0	2	0	3	21	0	73
Yellow Medicine #1	95	0	0	6	2	36	1	55
#2	98	0	2	0	2	64	3	29
Central								
Benton	98	0	2	0	11	49	0	38
Carver	98	6	2	0	1	46	3	42
Kandiyohi	98	5	2	1	2	46	2	43
Scott	98	3	2	2	1	46	3	43
Sherburne	45	0	1	0	0	18	14	67
East-central								
Anoka	96	0	0	4	1	82	1	12
Washington	80	0	0	2	1	29	1	67
South-west								
Cottonwood	6	0	0	0	0	4	79[c]	17
Lyon	93	0	0	11	2	74	1	12
Murray	95	0	1	2	1	92	2	2
Nobles	97	7	2	1	3	65	1	21
Pipestone	94	0	0	0	1	96	1	2
Redwood	80	0	1	3	3	34	10	49
South-central								
Blue-Earth #1	99	1	4	1	5	60	1	28
#2	95	2	2	5	1	32	2	56
Freeborn	92	0	1	1	3	57	1[d]	37
Martin	24	0	0	0	0	4	15[d]	81
South-east								
Goodhue	78	1	2	7	3	56	3	28
Winona	98	0	0	4	2	70	0	24

[a] Germination counts furnished by Seed Laboratory, Minnesota State Dept. Agr.

[b] Unless otherwise designated numbers refer to colonies of *Aspergillus glaucus*, *A. niger*, and *Pencillium* spp.

[c] *Mucor* sp., *Aspergillus* spp., and *Pencillium* spp. and an unidentified fungus.

[d] Unidentified fungus (see "c").

The North Dakota samples planted on an adjacent bench were not affected by seedling blight. No seedling blight developed when seeds of the Minnesota samples were planted in pots of steamed soil. It appears probable that the fungus responsible for the blight was in the greenhouse bench, and was not seed-borne. However, the possibility that the blight developed from a seed-borne fungus is not entirely eliminated. The first greenhouse test with soil inoculated with the fungus obtained from the diseased seedlings showed that the fungus was pathogenic but a second test did not give uniformly positive results. It would be advisable to have some work done on this seedling blight, for it is destructive and is not controlled too well by the seed treatment used in these tests, although treated seed unquestionably gave a greater stand of healthy plants than untreated seed. EMERGENCY PLANT DISEASE PREVENTION PROJECT.

NOTES ON DISEASES OF CEREALS AND GRASSES IN MINNESOTA AND NORTH DAKOTA

Roderick Sprague

During 1944, in the vicinity of Mandan, North Dakota, rootrots of cereals have been somewhat more prevalent than usual. While seedling blight in wheat (Helminthosporium sativum) was not important this spring in this area, the common rootrot, caused principally by H. sativum, is abundant on wheat and even more so on barley. Barley also suffered from root browning (Pythium arrhenomanes) during an unusually warm period in late May. The barleys in the plots at the Field Station have very poor roots. Grasses, also, showed heavy seedling blight from P. arrhenomanes. The period of thinning out was about 2 weeks earlier than usual. The weather that followed, however, was cool and wet, which permitted some recovery from root browning, but favored Helminthosporium and to some extent Rhizoctonia solani eye spot in wheat and barley. There was also some root necrosis in oats. After recovery from an attack of halo blight, oats have been generally vigorous and very leafy.

Severe root necrosis of oats was noted in some fields near Breckenridge, Wadena, Luce, Clear Lake, and St. Cloud, Minnesota in mid-June. It was estimated the loss in some fields would be about 15%. P. arrhenomanes was prevalent on green foxtail, or bristlegrass (Setaria viridis) and on some of the oat samples. Some of them were too far past the critical stage to determine the species that had caused the necrosis but the symptoms were typical for those produced by Pythium spp. The condition was worst in a black gritty or sandy soil which may have been deficient in phosphorus.

This season has been favorable for bacterial leaf spots of grasses at Mandan, North Dakota. A wide stripe or yellow necrosis type of lesion resembling that caused by the Xanthomonas translucens group is important on the newly commercial grasses Agropyron intermedium and A. trichophorum. In our rootrot plots, we have noted what appears to be marked differences in susceptibility to this disease in clones of these species and also in clones of A. cristatum. These differences are being taken into consideration, therefore, in rogueing out undesirable types. X. translucens is very abundant on wheat in western North Dakota this year.

Chocolate spot (Pseudomonas coronafaciens var. atropurpurea) is common, as usual, on a large number of hosts. It is unfortunately abundant on our most promising strain of smooth brome (Bromus inermis) from Edmunds, North Dakota, which has shown rootrot tolerance. We do have other strains of brome that appear to show some seedling blight tolerance and that also are relatively free from chocolate spot and from Selenophoma spot.

A Selenophoma leaf spot on winter rye, which we have noted during the past three years in North Dakota, was collected also at Verndale, Minnesota. We have the fungus in pure culture and hope to compare it with Selenophoma bromigena and with the S.donacis complex, to which latter group it shows similarity except for the rather prominent pycnidia. We also collected Colletotrichum graminicolum, Septoria secalis, Helminthosporium sativum and Helminthosporium sp. on leaves of rye in central Minnesota, none of which were serious. S. secalis is common in most rye fields this year.

In attempting to determine the rootrot resistance of Bromus erectus (Mandan D947), we have experienced difficulty because, previously, the plants were nearly 100% affected with the head smut (Ustilago bullata). The leaves of smutted plants show marked specking and the entire plants tend to be stunted and suffer from winter killing. Last year we treated some of the seed with Arasan, (Tetramethyl thiuramdisulfide), which previously had been found to give excellent control of seed-borne stinking smut of wheat in Oregon. As a result of this treatment, this year, the seed crop of B. erectus is completely free from the head smut, while the untreated check shows 73% of the heads smutted. Apparently the original seed importation of this grass was smutty as we have seen this smut on the grass uniformly at Astoria, Oregon, Pullman, Washington, and Mandan, North Dakota. The grass shows some promise otherwise, and, with the clean seed now available, rootrot trials are possible.

DIVISION OF CEREAL CROPS AND DISEASES, July 7.

REPORTS ON DISEASES OF CEREAL CROPS AND GRASSES

BARLEY DISEASES IN MARYLAND AND DELAWARE: During the week of May 8 to 13 visits were made to the Eastern Shore of Maryland and Delaware and to western Maryland to observe diseases on grain and other crops. Bearded barley has been increased in production during the past 8 to 10 years, and diseases have become well established. Beardless barley is grown to some extent in the area visited.

Covered smut (Ustilago hordei) on bearded barley will average 2% for Delaware and 4% for Maryland. It is much more common in the barley section of the Eastern Shore than in the western section. One field near Salisbury on the Eastern Shore and one near Darnestown in western Maryland contained 8% smutty heads; 2 fields in the Glen area near Rockville in western Maryland showed 12 and 14% infection. On beardless barley the average will be about 2%; 20% of the heads were affected in one field near Williston in the Denton area of the Maryland Eastern Shore.

Loose smut (U. nuda) was present in all fields of bearded barley visited and would average about 1.5% for the 2 States. Infection ranged from 2 to 5% in some fields in the area from Denton to Hurlock, Maryland to Bridgesville, Delaware. Loose smut was less common in western Maryland. Beardless barley showed less smut than the bearded type.

Powdery mildew (Erysiphe graminis) was not observed on beardless barley, but was very prevalent on the bearded type. It was severe in thick stands in many fields in the vicinity of Denton and Westover on the Eastern Shore, and Smithsburg in western Maryland. It was light in Hurlock and eastward into Delaware, and in the vicinity of Clear Springs and Thurmont in western Maryland. In some thick stands the disease had killed the lower leaves and black perithecia were abundant on the gray-brown fungous mat.

Cladosporium cladosporiodes was associated with root rot observed in a wet part of one field near Denton, but may not have been the cause of the disease.

Scab (Gibberella saubinetii) [G. zeae] was observed in many fields; 2% head blight was seen in one field near Denton.

Spot blotch (Helminthosporium sativum) was present in most fields visited causing some loss in reduction of healthy leaf area. It often appeared along with stripe (H. gramineum). Stripe was present on the leaves in most fields of bearded barley; it was especially severe in the Queenstown-Wye Mills section and the Salisbury area and less damaging in fields observed near Hurlock, all on the Maryland Eastern Shore. Severe attacks will reduce head and grain development from 5 to 8%. On beardless barley, stripe occurred in most, and was severe in about a quarter, of the fields visited. In a field near Williston the disease was severe on 80% of the leaves and killing 5% of the plants. -- E. A. Walker, Emergency Plant Disease Prevention Project.

BARLEY DISEASES IN SOUTHERN MINNESOTA: During the week ending July 16, small grains were examined in the area from St. Paul, to Morris, to Waseca. The writer was accompanied by J. J. Christensen, M. B. Moore, and E. A. Andrews of the Division of Plant Pathology and by M. T. Henderson of the Department of Agronomy, University of Minnesota.

Up to the last week in June, relatively light leaf infections had occurred on barley, but during the past 2 weeks various leaf spots, as well as head blights and root rot, have developed rapidly. As a result, most barley fields in central and southern Minnesota are suffering heavy loss from disease, and the acre yield of barley in this area will be as low as that of 1943. On the leaves, bacterial blight (Phytomonas [Xanthomonas] translucens) appears to be the principal disease, but the atypical symptoms on the leaves make positive identification difficult under field conditions. Spot blotch also occurs on the leaves of many plants. It has not been possible always to evaluate the loss caused by each pathogen, but in most cases bacterial blight appears to be the primary disease. Pycnidia of Septoria passerinii were found commonly on old leaves in the barley plots at Morris, but again the relative importance of this pathogen could not be determined. The leaf diseases on barley resemble the root rots in their complexity, and in the difficulty of determining the primary organism responsible for the breakdown of leaf tissue. Root rot (Helminthosporium spp. and other fungi) has caused much loss in almost all fields, the number of heads filling out at this time being much below normal. Those heads that have come through are now being attacked by the head blight organisms (Helminthosporium spp., Gibberella saubinetii [G. zeae], and in some cases Phytomonas translucens). The diseases described above are principally responsible for the greatly decreased barley acreage in the more humid regions of central and southern Minnesota, but other diseases occur and contribute

somewhat to the poverty of the crop. Stem rust (Puccinia graminis), leaf rust (Puccinia anomala), loose smut (Ustilago nuda), covered smut (Ustilago hordei), and ergot (Claviceps purpurea) also are present in sufficient quantity to cause at least some loss, though of minor importance this year to the root rots, leaf, and head blights. -- Ian W. Tervet, Emergency Plant Disease Prevention Project.

SMUT ON SWEET CORN IN NEW YORK: Smut [Ustilago maydis] is appearing on sweet corn in Erie County. -- L. E. Curtis, Weekly News Letter, July 17.

CORN DISEASES IN LOUISIANA: In southern Louisiana, leaf blight (Helminthosporium turcicum) is common but not serious on field corn in East Baton Rouge Parish. Heavily infected specimens of Louisiana Hybrid #6810 showing considerable damage were received from LaFourche Parish.

During the period July 10 to 15 observations were made throughout the northern part of the State. In the entire area, crops were suffering considerably from drought. Early planted-corn has been damaged severely and it appears that the yield will be extremely low. Late-planted corn looks very well and has a good chance if the drought is broken. A heavy rainfall occurred while the writer was in the Oak Ridge-Delhi-Monroe section. Although there has been very little rain in the Ouachita Valley, corn looked better there than elsewhere. In the Bunkie area leaves of mature corn were affected by leaf blight and by Gloeocercospora sorghi. In other areas, particularly northward, leaves were severely fired as a result of drought and it is doubtful if 25% of a normal crop will be harvested. -- Douglas C. Bain, Emergency Plant Disease Prevention Project.

CORN DISEASES OBSERVED IN ARKANSAS: Approximately 2300 acres were surveyed. Brown spot (Physoderma zeae-maydis) was observed in plantings in Jefferson, Arkansas and Crittenden Counties. In a large planting near Altheimer (Jefferson County), at least 20% of the plants showed primary infections. Leaf spot occurred in several plantings in the southern counties. In no instance was more than 2% of the leaf area affected. Rust (Puccinia sorghi) was present in several plantings in Sebastian, Polk, and Hempstead Counties. Infection was usually limited to the lower leaves and in most instances only a few pustules were observed. Smut was observed in several fields surveyed. Typical leaf and stem infections were present in 2 fields near Marianna (Lee County). Several plantings in the southwestern counties had smut infections. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. June 20 - July 10.

FLAX DISEASES IN SOUTHERN MINNESOTA: During the week ending July 16, small grains were examined in the area from St. Paul, to Morris, to Waseca. The writer was accompanied by J. J. Christensen, M. B. Moore, and E. A. Andrews of the Division of Plant Pathology and by M. T. Henderson of the Department of Agronomy, University of Minnesota.

Rust (Melampsora lini) occurred in most fields of Bison and Biwing but has not caused serious loss on the early-planted fields. Pasmo (Sphaerella [Mycosphaerella] linorum) has not developed in fields of Bison or Biwing sufficiently to cause more than a trace of loss although at the Morris Experiment Station, plots of Viking and Victory were very heavily attacked by this disease. -- Ian W. Tervet, Emergency Plant Disease Prevention Project.

DISEASES OBSERVED ON OATS IN NEW ENGLAND: Traces of crown rust (Puccinia coronata) were found in Westport and Melrose, Connecticut (July 10 - 12). In Rhode Island (July 13 - 15) crown rust was seen in Little Compton and Charlestown; prevalence here was 100% and severity heavy to very heavy. Traces of loose smut (Ustilago avenae) were found in one field in Charlestown; of covered smut (U. levis) [U. kolleri] in Little Compton and in one field in Melrose. Light to moderate attack by leaf blotch (Helminthosporium avenae) was uniformly distributed in fields observed in both States.--R. C. Cassell, Emergency Plant Disease Prevention Project.

OAT DISEASES IN WEST VIRGINIA: Colletions of 20 lots of spring oats used as seed by farmers in the South Branch Valley of West Virginia were planted in rod-row trials at Wardensville. This project was under the leadership of Mr. R. J. Friant, Extension Agronomist. Each lot was replicated to 4 plots. Disease counts were made by the writer on June 30, 1944.

Smuts averaged 1.68% of all heads. The distribution of smut in the 20 samples was as follows: no smut - 3 samples, trace - 3 samples, 0.1 to 1% - 5 samples, 1 to 3% - 4 samples, and 3 to 5% - 5 samples. Covered smut was present in 8 of the 20 lots (confirmed by microscopic examination) but in much smaller amounts than was loose smut in the same lots.

Crown rust was present in slight amounts on most of the plots. Of known varieties planted in the same series of plots, Tama and Vicland were free from rust, Columbia had a trace in one of 8 plots, Lenroc had a trace in all plots, while Patterson and Gopher ranged from slight to moderate infection in different replications.

Stem rust (P. graminis var. avenae) was found on a few culms in one replication of Columbia and in one replication of an unamed late oat.

Of the farmers' lots, 4 were recorded as being early (as Columbia), 4 of medium maturity date (as Tama and Vicland), and 12 were late (at least as late as Patterson).

Surplus seed of most of the oat lots was available and 5 of the lots containing 0.3% smut or less were tested for the presence of New Improved Ceresan. All gave a negative test. Likewise, 7 of the samples of barley seed from the same trials were tested with negative results. It is recognized that these results do not preclude the possibility of a formaldehyde treatment having been used. -- Carlton F. Taylor, West Virginia Agricultural Experiment Station.

DISEASES ON OATS IN NORTHEASTERN OHIO: Numerous oat fields were examined during the period July 10 to 15. This crop was planted from 2 to 4 weeks later than normal. Very shortly after planting weather gradually became warmer and drier, and about the time of heading near-drought conditions prevailed over the entire area. As a result the crop was short, and although planted late, it matured from 1 to 3 weeks early depending on the location. Diseases were noticeably absent. In most fields a trace of crown rust was found but no field was observed where damage to the crop was evident. Only traces of loose and covered smuts were found. Helminthosporium leaf blotch was noted in every field examined and was the only pathogenic disease causing damage to the crop; in a number of fields leaf injury was sufficient to cause possible damage, and premature ripening resulted.--M. R. Harris, Emergency Plant Disease Prevention Project.

OAT DISEASES IN SOUTHERN MINNESOTA: (See barley report for areas covered, etc.). Stem rust and crown rust were found in most fields of Gopher and other susceptible varieties. Severity for stem rust on Gopher ranged from a trace to 20%, with an average of about 3%. In fields of Vicland and other resistant varieties, a trace of stem rust was found. Crown rust was very heavy on susceptible varieties, average severity being not less than 80%. At the Morris Experiment Station, both race 2 and race 8 of P. graminis var. avenae were present, since on Vicland and Tama large and small pustules were present. Some selections from Bond crosses were also attacked by race 8.

Halo blight (Phytomonas [Pseudomonas] coronafaciens) was found in most fields while a trace of the oat smuts, mainly Ustilago avenae, occurred in fields of Gopher. On the basis of fields examined during the past week, it appears that not more than 50% of the oat acreage in central and southern Minnesota has been planted to the new varieties such as Vicland and Tama. -- Ian J. Tervet, Emergency Plant Disease Prevention Project.

OAT DISEASES IN MISSOURI: During the period July 3 to 15, surveys were made in central, north-central, and northeastern Missouri. Crops in this general area are showing the effects of lack of moisture. A portion of the survey was made with Mr. Ivar Twilde, State Barberry Leader, U. S. Bureau of Entomology and Plant Quarantine. Most of the oat fields have been harvested or are ready to harvest, as far north as the Iowa border, although a few fields in the milk stage can still be found. Oats have probably been more seriously damaged by the hot, dry weather than by disease, and yields will be considerable below the average. Stem rust was found in all fields examined; prevalence ranging from 50 to 100% and severity from a trace to 20%. The prevalence and severity of crown rust was difficult to determine because of the dried condition of the foliage. It was observed in all fields and the prevalence probably approached 100%. In a few fields the severity probably averaged 25%, but in general it appeared to be much less. It is likely that the crop matured so fast that the rusts caused little damage except in a few isolated situations. Loose and covered smuts were noted in approximately 50% of the fields, causing together an average loss of about 5%. A trace of scab was noted in a few fields. -- T. W. Bretz, Emergency Plant Disease Prevention Project.

REPORTS ON RYE DISEASES: In CONNECTICUT, leaf rust (Puccinia rubigo-vera var. secalis) was found in North Haven, Greenwich, and Windsor; prevalence was 100% and severity heavy in all cases. Stem rust was found in North Haven, Greenwich, and Broad Brook. In North Haven and Broad Brook prevalence was 100% and severity ranged from a trace to 25%. In one field in Greenwich prevalence was about 25% and severity a trace to 5%. Heavy infection by ergot (Claviceps purpurea) was found on volunteer rye along the roadside in North Haven. Ergot was also found in moderate amounts on volunteer rye in Tuckertown, RHODE ISLAND (R. C. Cassell, July 10-15).

A light infection by leaf rust was observed on lower leaves in many fields visited on the Eastern Shore in the Federalsburg-Hurlock, MARYLAND, and Laurel, DELAWARE, areas. Powdery mildew was present on lower leaves and progressing upward on the plants to cause slight to moderate infections in a thick stand near Hurlock (E. A. Walker, May 8-13). -- From Emergency Plant Disease Prevention Project Reports.

SORGHUM DISEASES IN SOUTHERN STATES: A few plantings of sorghum were examined in the Sand Mountain area of northern ALABAMA. Bacterial stripe (Bacterium [Pseudomonas] andropogoni) was prevalent in all, and particularly severe in one field (G. M. Stone, July 3-15).

Leaf spot (Cercospora sorghi) is appearing in plots on the Experiment Station grounds at Baton Rouge, LOUISIANA (July 3-8). Two fields of about 2 acres each were examined in the Bunkie area in northern Louisiana (July 10-15). Over 30% of the heads in both fields were infected by covered kernel smut (Sphacelotheca sorghi). All leaves on all plants showed heavy infection by Titaeospora andropogonis, Pseudomonas andropogoni, Cercospora sorghi, Gloeocercospora sorghi, and Puccinia purpurea. It is of interest to note that T. andropogonis was found for the first time in the United States in this area, on Johnson grass. This fungus causes one of the most serious diseases of Kaoliang in China. Other small plots of sorghum were seen in this area that were entirely free from diseases; the fact that no Johnson grass occurred in the vicinity might account for lack of infection. This weed is a very susceptible host for all of these leaf organisms. (Douglas C. Bain).

Covered kernel smut was common in test plantings of Honey Drip sorghum at the Tomato Disease Laboratory at Jacksonville, TEXAS. (George E. Altstatt, July 14). -- From Emergency Plant Disease Prevention Project Reports.

LEAF RUST ON WHEAT IN CONNECTICUT: Leaf rust (Puccinia rubigo-vera var. tritici) was found in one field in North Haven; prevalence was 100% and severity heavy. -- Robert C. Cassell, Emergency Plant Disease Prevention Project. July 10 - 12.

WHEAT DISEASES IN MARYLAND: Wheat was in the pre-heading stage in the Chesapeake Bay area during the second week in May. Leaf rust was beginning to appear on some leaves in fields in the vicinity of Westover on the Eastern Shore (May 9), and was not generally observed elsewhere. Helminthosporium sativum leaf spot was observed in many fields near Denton on the Eastern Shore. Heads infected by loose smut (Ustilago tritici) were first observed near Westover, where a field was beginning to head. Powdery mildew was appearing on lower leaves in thick stands near Westover. A light infection was also noticed near Rockville in western Maryland. -- E. A. Walker, Emergency Plant Disease Prevention Project.

YELLOW SPOT ON WHEAT IN VIRGINIA AND WEST VIRGINIA: The wheat leaf spot reported in earlier reports from Virginia and West Virginia as "unidentified" (PDR 28(15): 501, (17): 558) has been identified by Dr. A. G. Johnson and Dr. Leland Shanor as being caused by Helminthosporium tritici-vulgaris. This is believed to be the first record of this organism on wheat from West Virginia. -- Carlton F. Taylor, West Virginia Agricultural Experiment Station.

DISEASES OF WHEAT IN SOUTHERN MINNESOTA: (See barley report for area covered, etc.). Stem rust (Puccinia graminis var. tritici) was found on all fields of winter wheat with an average severity of 20%. No stem rust was found on Thatcher, but on Rival a trace of large pustules occurred. Leaf rust was very severe on winter wheat, readings as high as 95% severity being recorded. On spring wheat, Thatcher was attacked more severely than

Rival, the average severity readings being 50% and not over 10% respectively. On spring wheat, the most conspicuous and damaging disease was a leaf scorch, characterized by the development of white or light-colored areas on the leaves. At the Morris Agricultural Experiment Station, the injury was especially severe, but all fields of spring wheat were affected. While the cause of this injury has not been identified positively, preliminary examination of the leaves suggested a bacterial pathogen as the responsible agent. The lack of pycnidia on old lesions seems to eliminate Septoria as the cause. Black chaff (Phytomonas translucens var. undulosa)[X.translucens f. sp. undulosa] and head blight (Gibberella saubinetii [G. zeae] and Helminthosporium spp. principally) were becoming abundant and it is probable that heavy infections of these diseases may occur this year. Root rot (cause not definitely assigned but probably Helminthosporium spp.) and stem maggot were responsible for the killing of many heads, loss from the 2 sources being not less than 2 and possibly as high as 5%. -- Ian W. Tervet, Emergency Plant Disease Prevention Project.

DISEASES REPORTED ON VARIOUS GRASSES: On timothy, Heterosporium phlei leaf spot was found in one field in Broad Brook, Connecticut; prevalence was 60%, severity light to moderate. Scolecotrichum graminis leaf spot was observed in fields near Princess Anne on the Eastern Shore of Maryland.

Leaf spot (Ascochyta graminicola) was frequent on leaves of orchard grass in a pasture field near Millboro, Delaware.

Crown rust (Puccinia coronata) was found on quack grass in Newport, Rhode Island; prevalence was 100% and severity moderate. -- Reports from Connecticut and Rhode Island, R. C. Cassell, July 10 - 15; from Maryland and Delaware, E. A. Walker, May 8 - 13, Emergency Plant Disease Prevention Project.

DISEASES REPORTED ON LEGUMINOUS FORAGE AND FIELD CROPS

The reports are of Emergency Plant Disease Prevention Project Surveys.

DISEASES OF ALFALFA: In CONNECTICUT, light attacks of the leaf spots caused by Pseudopeziza medicaginis and Pleospora trifolii were observed in a field in North Haven and one in Melrose. Prevalence of the former was about 50% in the North Haven field and 60% in the other; of the Pleospora leaf spot 90% in the North Haven field and about 60% in the Melrose field. Both leaf spots were found in one field in Charlestown, RHODE ISLAND, also, prevalence of the Pseudopeziza spot being about 50% and severity light; of the Pleospora spot, 100% and moderate (R. C. Cassell, July 10 - 15).

Alfalfa was growing rapidly in fields observed on the Eastern Shore of MARYLAND and DELAWARE and in western Maryland during the week of May 8-13. Leaf spots were showing abundantly. Anthracnose (Colletotrichum trifolii) was noted in several fields near Denton, Maryland, doing some damage to the foliage and infecting the stem also. Spotting due to Ascochyta imperfecta was seen on the leaves and to some extent on the stems in the Wye Mills section of Maryland. Pseudopeziza leaf spot was becoming common on the lower and middle leaves in the Chesapeake-Delaware Bay region, and considerable stem spotting occurred in the Buckeystown area of western Maryland (E. A. Walker).

SPHAERULINA LEAF SPOT OF LADINO CLOVER IN RHODE ISLAND. Leaf spot (Sphaerulina trifolii) was seen in one of the College cooperative pasture improvement projects in Newport. The disease was confined to the earlier growth and according to Dr. Irene H. Stuckey of the Department of Plant Pathology and Physiology it was serious enough to kill the greater part of the early stand on the 10-acre field. Later growth has recovered with a minimum of damage under dry conditions. -- R. C. Cassell, July 13 - 15.

CLOVER DISEASES IN DELAWARE AND THE MARYLAND EASTERN SHORE: On crimson clover, crown rot (Sclerotinia trifoliorum) was killing at least 10% of the mature plants in several fields observed near Westover, Maryland, and was slightly less severe near Pocomoke. In one field near Manokin 99% of the plants had been killed by this disease during the winter and spring. A field of crimson clover, wheat, and vetch for hay west of Hurlock showed areas where the clover was killed by crown rot, and sclerotia were abundant on the dead crowns and roots. In the crimson clover area in Delaware, west of Laurel and Seaford, where crown rot is severe, 10% of the plants had been lost during the early spring, and an occasional maturing plant was now showing signs of being affected.

Crown rot was killing from 2 to 5% of the plants in red clover fields in the Westover-Princess Anne, Maryland, area.

Variegation (physiogenic) was observed on several plants in a crimson clover field near Salisbury, Maryland. -- E. A. Walker, May 8 - 13.

DISEASES REPORTED ON COWPEAS: From a small patch to several acres of cowpeas (usually Crowders) are to be found on almost every farm in the Sand Mountain section of northern ALABAMA. Few plantings were observed where Fusarium wilt [F. oxysporum f. tracheiphilum] was not prevalent. Damage in many patches was severe. After wilt was found in each of the first several plantings observed, I purposely made observations in the nearest cotton fields for wilt. Cotton was quite often adjacent. There seemed to be no association at all of cowpea wilt with cotton wilt. In many cases no wilt was found in the cotton. The observation may be of interest to those working on strains of Fusaria (G. M. Stone, July 3 - 15).

In the northern part of LOUISIANA leaf spot caused by Cercospora vignae, and Fusarium wilt were found to be common in all cowpea plantings observed. Wilt was particularly damaging in the Homer-Ruston-Calhoun area (Douglas C. Bain, July 10 - 15).

In TEXAS, Cercospora cruenta was common on Purple Hull cowpeas in Rusk, Cherokee, and Cass Counties. Bacterial stem canker (Xanthomonas vignicola) was attacking Purple Hull cowpeas at the Tomato Disease Laboratory at Jacksonville but had not become severe. Fusarium wilt was severe in plantings at the Texas Agricultural Experiment Station at Tyler (George E. Altstatt, July 14).

DISEASES OF PEANUTS: Peanuts in the Sand Mountain area of ALABAMA were found to be unusually free from disease. No leaf spot or southern blight was seen (G. M. Stone, July 3 - 15).

Approximately 350 acres were surveyed in ARKANSAS, June 20 - July 10. Cercospora leaf spot was observed in Crawford, Franklin, Polk, and Cross Counties. Defoliation of the lower leaves was evident in the planting at Ozark in Franklin County, and considerable spotting and yellowing of the foliage was observed in the other plantings. Southern blight (Sclerotium

rolfsii) occurred in 2 of the plantings examined, but not over 1% of the plants in the most severely affected field showed typical symptoms. Soreshin (Rhizoctonia solani) was causing very little loss in the 2 plantings where it was observed, in Franklin County. Fusarium moniliforme has been isolated by Dr. W. W. Ray, from root rot affected plants collected from a field near Ozark (Howard W. Larsh).

DISEASES REPORTED ON SOYBEANS: About 25 fields of soybeans grown for hay were examined in the Sand Mountain area of northern ALABAMA. The greater part had been planted late, after small grain, and consequently were suffering from lack of moisture. There were no leaf diseases in evidence. Rhizoctonia was found to be causing considerable damage in small areas in several fields (G. M. Stone, July 3 - 15).

Bacterial blight (Bacterium sojae) [Pseudomonas glycinea] and bacterial pustule (Bacterium [Xanthomonas] phaseoli var. sojense) were present in all fields observed in northern LOUISIANA, but were considered to be of minor importance. The bacterial spot identified as caused by the organism causing tobacco wildfire (see July 7 issue PDR) was found in considerable amounts in one large field of corn and soybeans near Mer Rouge. This is the second location of the disease found this year. Downy mildew (Peronospora manshurica) appeared to be widespread in fields in Ouachita Parish. This disease does not seem to be severe at present (Douglas C. Bain, July 10 - 15).

A planting of soybeans between trees in a block of apple trees of the University of MISSOURI, Horticultural Farm a few miles west of Columbia showed many scattered plants that were considerably dwarfed and either badly wilted or already dead. Reddish-brown lesions were noted on the lower portions of the stems and many of the roots were dead. Specimens were sent to the Emergency Plant Disease Prevention Laboratory at Stillwater, Oklahoma for diagnosis. Species of Pythium and Fusarium, and Macrophomina phaseoli (Sclerotium bataticola) were obtained from the specimens by Dr. W. W. Ray. Since any one of these organisms is capable of causing trouble on soybeans, it appears that a complex of fungi was responsible for the wilting and death of the affected plants (T. W. Bretz).

REPORTS ON DISEASES OF SPECIAL CROPS

Except where indicated, reports are of Emergency Plant Disease Prevention Project surveys.

COTTON DISEASES IN THE CAROLINAS: The period from May 29 to June 10 was spent in the Coastal Plains section of the Carolinas, giving special attention to corn and cotton. Dr. Richard Weindling accompanied the writer on an extensive trip in South Carolina.

Stands are poor in low places in fields throughout the State, as cotton was planted after the heavy rains and before the low places had dried out. Stands in fields generally vary from good to poor, being correlated rather well with the time of planting in relation to the rainy period. Although most of the seed planted is treated, many plants at this time show stem cankers caused by Rhizoctonia and other organisms. There probably had been greater damage earlier in the season. Most fields visited showed from a trace to 100% prevalence of angular leaf spot [Xanthomonas malvacearum]

In several fields the leaf spot was causing defoliation and in a few fields the black arm symptom was observed. Fusarium wilt [F. oxysporum f. vasinfectum] was beginning to become apparent in light soils. The worst damage observed was in a field where 25% of the plants showed symptoms. Seedlings and young plants in several fields showed canker-like bruises on the stems that were due to hail injury. One of these fields was a total loss, with 90% of the plants killed. In a few fields a Cercospora leaf spot was showing on the older leaves. -- R. E. Atkinson.

COTTON DISEASES IN ALABAMA: The Sand Mountain area of northern Alabama is one of the leading agricultural sections of the State. Cotton is the principal crop. The per acre yields are higher than in any other part of the State. The greater part of the area was found to be suffering from extremely dry weather when visited, July 3 - 15.

Except for poor stands in many fields the cotton crop on the "Mountain" is good. Fuasrium wilt was the only disease of importance noted, and here only occasional fields were found where wilted plants exceeded 1%. In one 8-acre field nearly 100% of the plants were wilted with more than half of the plants dead. Several other fields were found in which wilted plants ranged from 3 to 15%. The variety D. P. L. is most commonly grown.

In several fields noted nonparasitic "rust" was quite bad. Growth in these fields was poor. -- G. M. Stone.

COTTON DISEASES IN NORTHERN LOUISIANA: Cotton in northern Louisiana, thus far, does not seem to have been affected seriously by drought, although in many areas leaves were wilted somewhat. Angular leaf spot and Fusarium wilt were the most common and widespread diseases observed. Plants in some fields were rather heavily spotted with the bacterial disease and infected bracts were noted occasionally in the Red River Valley. In only 2 instances were spots found on bolls. It was of interest to note that in the Mer Rouge-Oak Grove area, where plantings were on comparatively new ground, neither disease was found. More than 15% wilt was observed in one large field near Monroe.

What appears to be Verticillium wilt (V. albo-atrum)was found in 2 small spots on a plantation at Gayles in Caddo Parish. Diseased material has been cultured. According to Dr. D. C. Neal, this wilt was found on the same place a year or so ago.

A trace of leaf spot (Cercospora gossypina) was found near Powhatan in Natchitoches Parish. -- Douglas C. Bain, July 10-15.

ROOT ROT AND ANGULAR SPOT ON COTTON IN TEXAS: During the period ending July 14 a survey trip was made through northeast Texas. Cotton root rot, Phymatotrichum omnivorum was becoming severe in a large field near Greenville, and was very severe in the Greenville Station (U.S.D.A.) in a field cropped continuously to cotton for about 25 years. Angular leaf spot was prevalent in all areas of northeast Texas visited. Infection varied from a trace to slight. -- George E. Altstatt.

COTTON DISEASES IN OKLAHOMA: Approximately 1800 acres were surveyed, June 7 - 20.

Angular leaf spot still remains prevalent on cotyledons and lower leaves where seed treatment was not followed, and in 2 plantings severe spotting of the older leaves was observed. Soreshin (Rhizoctonia solani) continues

to reduce the stands in several cotton-growing counties, and can be found in almost every planting. Nearly 5% loss was observed in plantings in Comanche, Tillman, and Cotton Counties. The greatest damage done to cotton in Tillman County up to the present time has been by hail and blowing sand. Hail destroyed several of the plants by injuring or destroying the growing tip. Blowing sand has riddled many of the leaves to such an extent that they will probably never recover. -- Howard W. Larsh.

COTTON DISEASES IN ARKANSAS: Approximately 1800 acres were surveyed, June 20 - July 10. Soreshin occurred in several plantings, and was causing considerable loss in fields near Searcy in White County. Specimens collected from various counties and sent to Dr. W. W. Ray yielded Rhizoctonia solani in most cases when cultured; Sclerotium bataticola and Fusarium moniliforme were also isolated from some of the specimens. Angular leaf spot infections were limited to the cotyledons in most instances. In only 2 fields, in White County, was any appreciable reduction in leaf area caused. Fusarium wilt was observed July 7 in a planting near Trumann in Poinsett County. -- Howard W. Larsh.

SCLEROTIUM ROLFSII ON KOK-SAGHYZ: Sclerotium rolfsii Sacc. was observed on 8-month-old Kok-Saghyz (Taraxacum kok-saghyz Rodin) in the Lower Rio Grande Valley near Edinburg, Texas. Plants were killed by the fungus in an area where water had stood for several hours following heavy rains in May. No injury was observed in the portion of the planting where water did not stand.

Strands of Rhizoctonia were also observed on the roots of many plants but the fungus was apparently causing little or no damage. -- John T. Presley, Guayule Research Project.

DISEASES ON TOBACCO IN CONNECTICUT: Black root rot (Thielaviopsis basicola), according to Dr. P. J. Anderson, is worse this year in the Windsor tobacco section than it has been for many years, especially on tent tobacco. Many tents probably have as many as 25% affected plants. Dr. Anderson attributes the outbreak this year in susceptible varieties to the cool nights during June and the use of barn manure in many of the fields. It is expected, however, that with the recent advent of hot weather many affected plants will recover to a great extent.

Mosaic (virus) also is reported by Dr. Anderson and several growers to be worse than usual in the Windsor area this year. Many fields are averaging 2 to 3% affected plants.

Downy mildew (Peronospora tabacina), although present in the Windsor area, is practically negligible thus far. There is less this year than for many years past. -- R. C. Cassell, July 10 - 12.

TOBACCO DISEASES IN SOUTHERN MARYLAND: Tobacco farms were visited in southern Maryland during the first week in May to observe diseases in tobacco plant beds. Anthracnose (Colletotrichum sp.) was not observed in any plant beds visited at this time. Downy mildew was not observed except as a primary infection in a new plant bed near Valley Lee, where it had been seen by the grower 2 days before (May 4). Plants affected were about the size of a silver dollar and a few were beginning to lift up from the ground. Wildfire (Pseudomonas tabaci) had been reported to the County Agent of St. Marys County by many growers in the Potomac River bottom area,

where it is very destructive in most plant beds. Growers are using Bordeaux mixture spray and dust to control it with success. -- E. A. Walker.

DISEASES REPORTED ON APPLE

Except where indicated otherwise, reports are of Emergency Plant Disease Prevention Project surveys.

FIREBLIGHT ON PEAR AND APPLE IN CONNECTICUT: Attention was called by Dr. J. G. Horsfall to a severe outbreak of fireblight (Erwinia amylovora) in Greenwich. Here it was found that 14 of 65 acres of pears were seriously infected. This is the third serious outbreak of fireblight in this orchard, the first was in 1922 and the second in 1934. There has been only light spread of the disease in certain intervening years. This year the operator reports watching the disease progress down a branch as much as 6 to 8 inches in 24 hours time, accompanied by heavy oozing. There appeared to be about 90% blossom and 10% terminal infection. Figuring the cost of pruning, and the crop loss this year and next, the operator estimates that fireblight has cost him at least $1000 a week since the first week of June. Pruning has had to be so severe in many cases as to reduce the tree to a mere stump.

There are also 200 acres of apples on the Greenwich farm to which fireblight has spread, especially in the Wealthy and Pippin varieties. However spread in the apples is not so bad but what it can be kept under control by pruning. E. M. Stoddard of the Connecticut Station reports that fireblight is apparently more serious than usual throughout the State this year. -- Robert C. Cassell, July 10 - 12.

SCAB AND RUST ON APPLE IN RHODE ISLAND: Scab (Venturia inaequalis) is generally present throughout Rhode Island. Dr. Locke reports that the unsprayed trees in the College Orchard are being defoliated by scab. This has happened in spite of the fact that there were no periods of heavy ascospore discharges this spring. Spore discharges were in general slow, light, and prolonged through a period not particularly conducive to spore discharge this year.

Apple rust (Gymnosporangium juniperi-virginianae) was found in Kingston and Clayville. Some particularly heavy infections were pointed out by Dr. Locke near cedars in Kingston. -- Robert C. Cassell, July 13 - 15.

SCAB AND FIREBLIGHT IN NEW YORK: Scab apparently has been checked in Rockland County (W. J. Clark). In Niagara County most orchards have enough scab on the leaves to warrant a fungicide to protect the fruit (L. A. Putnam). Scab is at a standstill in most orchards in Orleans County, although continued protection is necessary. Many orchards carry an abundance on the leaves while some show quite a bit on the fruit (Gerard G. Maier). Apple scab is still a problem in many orchards in Wayne County, with severe fruit infection showing in poorly sprayed blocks (Cyril G. Small).

Fireblight has been more generally prevalent this year than for the past 6 years in Rockland County. Nearly all varieties have some terminal blight (W. J. Clark). Fireblight is noticeable in a few apple and pear orchards in Wayne County (Cyril G. Small). -- The reports are from the New York State College of Agriculture, Departments of Entomology and Plant Pathology Weekly News Letter, July 10.

DISEASES ON APPLE IN NEW JERSEY, DELAWARE, AND MARYLAND: Development of the scab fungus on overwintered leaves was greater than usual, following a late wet fall during which an abundance of late leaf infection occurred. The wet spring indicated that the disease would become a major problem this year. First ascospore discharge was observed at Berlin, Maryland on April 12, and at Bridgesville, Delaware, April 13. A heavy discharge took place in the Baltimore city area and northward to the Frederick-Montgomery County line on April 15, following a 2-day rainy period. Perithecia on leaves from the South Jersey area April 15 were 3/4 grown with some asci in the early banana stage.

A visit was made to southern Maryland during the first week in May. Primary scab infection was first seen on bud leaves near Aquasco in lower Prince Georges County, May 31. Black rot (Physalospora obtusa) was first observed near Aquascoon bud leaves in unsprayed home orchards. It was general in home orchards in the La Plata, Hollywood, and Owings sections.

During the week of May 8-13, visits were made to the Eastern Shore of Maryland and Delaware and to western Maryland. Scab was readily observed in home orchards not properly sprayed in the Bay area, where it was abundant on the bud leaves and beginning to appear on the first to third secondary leaves. It was practically absent in commercial orchards in the Dover-Bridgesville area. One orchard near Berlin showed heavier than usual infection on the bud leaves and slight spotting on the 1st to 3rd secondary leaves. Scab was not observed on any fruit in this section.

In western Maryland scab was not observed in commercial orchards in Rockville, or Smithsburg and was generally absent in the Hancock area except for 2 orchards not properly sprayed in which slight scab on the bud and 1st to 2nd secondary leaves was evident on Rome and Delicious. Scab was found in commercial orchards in the Darnestown area; and on York Imperial and Delicious near Frederick where it had appeared on the 3rd secondary leaf and petioles and fruit pedicels were also infected. Scab was severe on bud leaves in the Clear Springs area; it was well distributed in orchards in the vicinity of Edgemont, Deerfield, and Thurmont; and was found on the 3rd to 4th leaves at Beaver Creek and on the petiole and calyx near Cavetown. Home orchards in western Maryland were generally showing severe leaf infection.

Black rot leaf spot was developing rapidly on trees showing dead or cankered limbs in home orchards throughout the area visited May 8-13, and an occasional tree in some commercial orchards was similarly affected, but most commercial orchards were free from the disease. Severe leaf spotting was observed in one neglected orchard near Denton on the Maryland Eastern Shore. In western Maryland severe spotting was observed in an orchard near Clear Springs, and on York Imperial in a Frederick orchard. Orchards observed in the Hancock area were free from the disease except for 2 that showed only a slight amount.

Fireblight was practically absent in commercial orchards but was appearing in unsprayed home orchards. A slight amount was observed on Jonathan in an orchard near Salisbury on the Eastern Shore. Progressive extension on large limbs of previous seasons' infection was noted in one McIntosh orchard in Frederick. Killing of one side of a McIntosh tree near Frederick by lightning resembled fireblight damage. -- E. A. Walker

BITTER ROT IN WEST VIRGINIA: Bitter rot (Glomerella cingulata) was present on the fruit on a number of Grimes Golden trees in Mason County on

July 5. -- Carlton F. Taylor, West Virginia Agricultural Experiment Station.

SCAB AND RUST IN NORTHEASTERN TENNESSEE: In the few commercial orchards seen in upper east Tennessee, rust on the leaves was rather abundant. Scab was more abundant than for some years. In one 360-acre orchard the orchardist attributed the prevalence to the use of wettable sulfur in the early sprays in place of lime sulfur, and to earlier wet weather. The small unsprayed home orchards were 100% severely attacked and seemed a hopeless proposition. -- R. A. Hyre, July 10 - 14.

ROOT ROT ON APPLE IN NORTHERN ALABAMA: In Blount County a small apple orchard in which dying of some trees had been reported was visited. Most of the trees were found to be suffering from an advanced stage of Armillaria root rot (A. mellea). -- G. M. Stone, July 3-15.

RUST AND FIREBLIGHT IN MINNESOTA: Apple trees in farm orchards were often heavily infected with fireblight. In a few cases, very heavy infection of cedar-apple rust occurred. -- Ian W. Tervet, Week ending July 16.

APPLE DISEASES IN NORTHEASTERN IOWA: In the northeastern portion of the State home orchards showed neglect and many of the trees were attacked by fireblight; some varieties have been almost destroyed. Scab was present but not severe. Blotch [Phyllosticta solitaria] and black rot were also present on the leaves of all trees examined. -- Edgar F. Vestal. Period ending July 8.

APPLE RUST IN MISSOURI: On the University Horticultural Farm near Columbia a trace of cedar-apple rust leaf infection was observed. -- T. W. Bretz, July 3 - 15.

FIREBLIGHT ON APPLE IN WESTERN OREGON: Typical fireblight symptoms had been noted on an old abandoned group of trees in Lincoln County by Dr. P. W. Miller, June 9. No evident spread had occurred when observed June 30. -- Lytton W. Boyle.

ANTHRACNOSE AND OTHER DISEASES IN CALIFORNIA APPLE-GROWING REGIONS: The presence of apple tree anthracnose (Neofabraea malicorticis) in California has been known for a number of years but so far as it is known the disease has caused no appreciable damage and the reports of its presence have been infrequent. The disease was again brought to the attention of the pathologists recently, when specimens were sent in for identification from Watsonville in Santa Cruz County. Visits to some of the orchards in this district and collections of material by Dr. H. E. Thomas and myself (in cooperation with the office of the County Agricultural Commissioner of Santa Cruz County) have confirmed the presence of the disease in this district. Anthracnose was found in 3 orchards north of Watsonville. In one of these orchards the disease threatens to become a serious problem if not controlled. Several trees showed numerous typical anthracnose cankers on the branches. The grower had spent considerable time last spring cutting out cankers and disinfecting the wounds with Bordeaux. This orchard was 10 years old and the trees were in good growing condition. A trace of the disease was found in an old orchard just across the road. In another young orchard, 8 years old, several trees showed anthracnose cankers on the trunk near the ground. Although it is the accepted opinion that apple tree anthracnose is of little

importance in this State, it is now thought that it may represent a real threat and under certain conditions may become serious. A more thorough survey for this disease is being planned for the future, possibly in the fall when more time can be given to it.

Apple scab infection of both leaves and fruit was light to moderate in many of the orchards in the Watsonville district. Powdery mildew (Podosphaera leucotricha) was causing slight damage to twigs and leaves in this district but the damage was said to be lighter than usual. --H. L. Barnett, July 1 - 15.

PEACH BRANCH CANKERS IN VIRGINIA AND WEST VIRGINIA

Carlton F. Taylor

Increased concern regarding cankers on peach branches has been shown by peach growers of eastern West Virginia during the past 2 seasons. These cankers are rough, with prominent annular callus rings, the appearance of roughness being increased by excessive gummosis. Large cankers have several annular rings of callus and are more than 3 inches in length; other cankers, apparently one year old, are less than 1 inch in length. The cankers appear, in most cases, to have been initiated in branch crotches, if not at present being in a crotch, the center of the canker contains traces of a small, dead, twig. The most serious immediate result of these cankers is the resultant structural weakness of the affected scaffold branches.

A survey trip was made during the week of March 27 to April 1 to study some of the factors involved in the development of these cankers. The writer was accompanied by R. S. Marsh, Head of the Department of Horticulture, West Virginia Agricultural Experiment Station, throughout the trip; by Mr. E. C. Sherwood, Extension Plant Pathologist of West Virginia, during one afternoon; and by Dr. A. B. Groves of the Winchester Research Laboratory while in the vicinity of Winchester, Virginia.

Twenty-one peach orchards were examined, 16 in West Virginia and 5 in northern Virginia. Of these 21, 9 showed cankers in appreciable amounts, cankers being severe in 6 of the orchards. Of these 9 orchards, 8 had been sprayed thoroughly during the past few seasons, the other had been sprayed lightly and infrequently, but with lead arsenate and lime without the addition of zinc sulphate as a safener. Some of these orchards had suffered arsenical injury to the foliage in recent seasons. The monohydrated form of zinc sulphate had been used in these orchards in recent years.

Of the 12 orchards with cankers few to absent, 4 had not been sprayed during the past 4 seasons, 4 had been sprayed lightly, if at all, during the same period, and 4 had received the full recommended spray schedule. Of the latter group, 2 had been sprayed using the flake or hydrate form of zinc sulphate. In the other 2 orchards the operators had dissolved the monohydrate zinc sulphate before adding it to the spray mixture.

During April and May several orchards were examined in southern Virginia with results similar to those already described. Cankers were abundant where lead arsenate had been used without zinc sulphate, or where the monohydrate form had been used without special attention to its solution.

In the past few years, monohydrated zinc sulphate has largely replaced the flake or hydrate form of zinc sulphate in the Appalachian region. The

powdered monohydrate form had the apparent advantage of being easily washed through a strainer and usually was assumed to be in solution immediately after disappearance into the spray mixture. With the monohydrate form a few growers had observed deposit in the spray tank and had dissolved this product before adding it to the spray mixture. The flake form previously used was, of necessity, dissolved before passage through the strainer. Isolations from a number of cankers predominately yielded a fungus determined by Dr. Leland Shaner, Emergency Plant Disease Prevention Project, as Coniothyrium fuckelii.

Based on the above observations, it appears that the occurrence of branch cankers on peach trees in this area is correlated with the absence of, or inefficient use of, zinc sulphate as a safener in arsenical sprays. EMERGENCY PLANT DISEASE PREVENTION PROJECT.

OTHER REPORTS ON DISEASES OF FRUIT CROPS

Except where indicated otherwise, reports are from Emergency Plant Disease Prevention Project surveys.

DISEASES OBSERVED ON NURSERY STOCK IN MISSOURI: A survey of 2-year old peach, plum, apricot, cherry and pear stock was made at one of the large Missouri nurseries with Mr. J. Allison Denning, State Entomologist, and Assistant State Entomologists Rainwater and Froeshner. As a result of the hot dry weather that has prevailed, bacterial and fungous diseases of the aerial parts of plants have been held in check to a considerable extent.

The most prevalent and serious disease on the stone fruits was Bacterial blight (Phytomonas [Xanthomonas] pruni). On peaches the infection appeared to be confined to the foliage and was causing little damage. On plum and cherry, however, heavy foliage infection and severe cankering of the main stem and lateral branches was observed. The canker phase of this disease was particularly serious on the Great Yellow and Elephant Heart varieties of plum, and an estimated 50% of these trees were so heavily cankered that they were permanently damaged and unmarketable. The Omaha variety of plum showed moderately heavy leaf infection but relatively little damage from cankers. Both sweet and sour cherries showed infection of the foliage and some canker development. The cankers were most prevalent and severe on the sweet cherry stock.

A trace of Scab (Cladosporium carpophilum) infection on the foliage and the current year's twigs of peach was observed. Cherry Leaf Spot (Cocomyces hiemalis) was present to the extent of a trace. A trace of Crowngall infection (Phytomonas [Agrobacterium] tumefaciens) was observed on the peach stock. On pear, light leaf and twig infection by Fireblight was observed and a trace of Crowngall infection was also noted. The apricot stock appeared to be free of diseases. -- T. W. Bretz, July 3 - 15.

CHLOROSIS OF FRUIT TREES IN SOUTHERN IDAHO: Considerable time during the period June 19 to 24 was spent on checking orchards for Chlorosis, caused generally by excessive lime in the soil. The condition seems to be aggravated this year and probably is due to above-normal rainfall and cool weather. This trouble is becoming more severe on fruit and ornamental trees and shrubs generally in southern Idaho. -- Earle C. Blodgett.

DISEASES ON CHERRIES IN NEW YORK: Leaf Spot, while well under control in many Orleans County orchards, is showing up in others. A little is appearing on sweet cherries but it is not serious according to Gerard G. Maier. Cyril G. Small reports it is becoming more severe on sour and sweet cherries in Wayne County. Many sour cherry orchards in Schuyler County show a serious amount of leaf spot, which seems to be spreading from small areas rather rapidly, according to Irving A. Davis. A special copper spray in affected sour cherry orchards is being recommended in several counties (June 10). Brown Rot [Monilinia fructicola] is present on the fruit in some sweet cherry plantings in Orleans and Wayne Counties (June 10). An unusual Fruit Spotting, caused by Cercospora circumscissa, was found on sweet cherries in one orchard in Wayne County (June 10). Corking evidently caused by frost occurs in many sour cherry orchards in Wayne County, (June 10). Potash Deficiency is appearing in some young cherry orchards in Wayne County (June 17). -- Reports from Weekly News Letter for dates given.

DISEASES ON STONE FRUITS IN NEW JERSEY, DELAWARE, AND MARYLAND: Peach -- During March and April peach orchards in the 3 States were visited several times to observe Brown Rot and peach Canker development.

Apothecia of Monilinia fructicola from old peach mummies on the ground were observed to be generally immature just prior to blossoming and were maturing when the trees were in first to full blossom. Mature apothecia were observed at Berlin, on the Maryland Eastern Shore, on April 12 when peaches were in full bloom. Growers in the Berlin-Snow Hill area were spraying or dusting to control Brown Rot during the blossom period. The 1943 peach crop in Delaware and on the Eastern Shore was very light, and mummified fruit was difficult to find. One J. H. Hale orchard in Delaware east of Dover, that had produced a fair crop severely affected by brown rot in 1943, contained abundant mature apothecia on April 13 when about a quarter of the buds were open. No apothecia were found in South Jersey April 13-15, when the trees were in pre-blossom stage. Apothecia were abundant in western Maryland, in the Thurmont-Smithsburg-Hancock area April 18-20 and at Westminster April 22.

From April 25 to 29 a visit was made to the peach sections of New Jersey. Apothecia were very scarce in the Vineland-Fairton-Hammonton area where growers practice clean cultivation. They increased in number in the Swedesboro-Glassboro area and were very abundant in old orchards in the Camden area. North of Camden peach buds were swelling at that time, with an occasional flower, and apothecia were less abundant and immature. In the Stockton area apothecia were abundant but very immature and trees were in the pre-blossom stage. No apothecia were observed in the Flemington section. In the northern area sod orchards were common and the mummies were not frequently disturbed by cultivation. Old orchards contained more mummies and showed a great increase in apothecial development. From this year's observations, it appears that apothecia were developing from mummies and mummy fragments more than one year old, while 1943 brown-rotted fruits appeared to be not fully mummified and in many cases were still soft and watery and were not producing apothecia.

Canker (undetermined) was observed most frequently in Maryland orchards, to a slight extent in Delaware, and least often in New Jersey. It is thought that the cankers observed originate primarily in lesions due to winter, spray, or locust injury or brown rot infections, and that some specific organism is responsible for the continued canker development and growt

Two types were observed: the Constriction Disease which seems to have broken out in 1941, and the "Target Spot" cankers which fail to heal and show growth rings of 7 seasons. These unhealed cankers weaken the twigs and branches, which break when loaded with fruit. Younger twigs affected by constriction disease begin to show yellow foliage while the tree is making the crop and die by the end of the season. These troubles are increasing and need immediate attention to eradicate.

During the period May 8-13 visits were made to the Eastern Shore of Maryland and Delaware and to western Maryland. Brown Rot Blossom and Twig Blight was very abundant on unsprayed trees in home orchards along the Atlantic Coast area of the 2 States. The disease was well under control in most commercial orchards at this time. Slight twig blight was observed in one orchard near Federalsburg, Maryland. Blossom blight killed 80% of the blossoms in a low spot in an orchard near Hurlock. The worst attack of twig and blossom blight observed in this area was in an old orchard near Berlin. Growers in this area usually apply a spray or dust during blossom to control brown rot.

Orchards in western Maryland, in the Darnestown, Frederick, Smithsburg, and Hancock areas, showed practically no brown rot.

Leaf Curl (Taphrina deformans) was observed frequently in home orchards on the Eastern Shore in the vicinity of Denton, Salisbury, and Manokin, and in western Maryland in the Beaver Creek and Edgemont areas. In commercial plantings, severe attack was noted in 2 orchards in the Salisbury area, and lighter infection in one near Berlin. In western Maryland no peach leaf curl was found in the Hancock area, while a light infection was seen in 2 orchards in the Smithsburg-Cavetown section (May 12). It is unusual to find this disease in commercial peach orchards.

Bacterial Spot (Xanthomonas pruni) was observed on leaves of several trees in home orchards near Buckeystown in western Maryland (May 13).

Apricot -- Brown Rot was causing severe Twig and Leaf Blight in a small orchard observed during the second week in May in western Maryland near Edgemont, Washington County.

Sweet Cherry -- Black Knot (Dibotryon morbosum) was abundant on sweet cherry trees observed in the Thurmont area of western Maryland. Some large and many small limbs had been girdled and killed. The disease was not seen on sour cherry. Brown Rot was observed on fruit of the Bing cherry near Clear Springs in western Maryland, May 12. It was not affecting fruit in other areas at this time.

Wild Cherry -- Severe Twig and Leaf Blight due to the brown rot fungus was observed (May 8-13) near Williston and Manokin on the Maryland Eastern Shore, and on trees in fence rows near Valley Lee in southern Maryland (May 4). Spores were abundant on affected tissues in both areas.

Plum -- Very severe Brown Rot Blossom and Twig Blight was observed in a small planting, at Smithsburg on the Eastern Shore, in which mummies were left on the trees over winter. Light to moderate attack was noted in a Damson orchard nearby. -- E. A. Walker.

BACTERIAL SPOT ON PEACH IN NORTHERN ALABAMA: One commercial peach orchard in Blount County was examined. The orchard was unusually well kept and disease problems were at a minimum. Bacterial leaf spot was quite bad in a small section, but there was no defoliation. -- G. M. Stone, July 3 - 15.

DISEASES ON PEACH AND WILD PLUM IN NORTHEASTERN TEXAS: In a small grove of peach trees near Cooper, Bacterial Spot was causing slight damage to leaves. In this and other areas, Scab caused by Cladosporium carpophilum was common. Two trees in the grove near Cooper were Dying due to drowning. The tight soil did not permit sufficient drainage during the prolonged wet period earlier in the season.

In a small wild plum thicket, near Maud, Bowie County, Taphrina mirabilis had attacked numerous branches. The damage was confined mainly to the young tips of branches and leaves. -- George E. Altstatt, July 14.

PEACH DISEASES IN ARKANSAS: Approximately 85 acres were surveyed. Bacterial Spot was observed in nearly every orchard surveyed, causing considerable early defoliation and yellowing of the leaves. Fruit, leaf and stem infections occurred in most instances. Infections were observed in commercial orchards and home orchards, as well as in plantings on the Branch Experiment Stations at Hope and Marianna.

Scab occurred in most of the orchards surveyed in the southern counties. In most instances very little loss had resulted; however, in orchards near Nashville (Howard County), and Hope (Hempstead County) localized infections, on early maturing varieties, resulted in a loss of nearly 5%.

Brown Rot blossom, twig, and fruit infections were observed in orchards in Hempstead, White, and Washington Counties. In several small orchards near Searcy (White County) severe losses resulted. Spraying in this area is done, in most instances, with a barrel-sprayer equipment, which usually fails to give sufficient pressure to assure complete coverage of the tree, or to produce the desired mist-type of spray; a factor probably accounting, in part, for the lack of control of brown rot in this area.

Rootknot Nematode (Heterodera marioni) injury was observed in 3 orchards in Hempstead County. A loss of several young trees near Hope was due to nematodes.

Severe Arsenical Injury was observed in plantings near Searcy (White County). Leaves and twigs were collected from 2 orchards in this vicinity showing symptoms characteristic of arsenical injury.

Leaf Curl was the most prevalent disease of peach in Arkansas during the latter part of April. Infection ranged from 10 to nearly 100% of the leaves attacked. Several orchards that received a late dormant spray (March) had infections of 20 to 30%. Young fruits showed purple discolored areas due to leaf curl infections. -- Howard W. Larsh, June 20-July 10.

DISEASES ON FIGS IN LOUISIANA: Twig Blight (Corticium salmonicolor), Thread Blight (C. stevensii) [Pellicularia koleroga], Leaf Blight (Rhizoctonia microsclerotia), and Rust (Physopella fici), were noted on several trees in the vicinity of Baton Rouge during the first week in July. None of these diseases were serious at this time. -- Douglas C. Bain.

REPORTS ON DISEASES OF GRAPE: In Rockland County, NEW YORK, Black Rot (Guignardia bidwellii) appeared to be plentiful and some gardens are damaged severely (W. J. Clark, Weekly News Letter, July 10).

In ARKANSAS, where approximately 125 acres were surveyed from June 20 to July 10, Black Rot was the most prevalent and destructive disease observed. In vineyards in Benton, Washington, Franklin, Hempstead and Lee Counties it was causing destruction of the fruiting spurs, berries, stems and leaves. A loss of at least 50% of the berries in a large vineyard near Altus (Franklin

County) was observed. The varieties Delaware, Niagara, Cynthiana, Concord, Campbells Early, and Green Mountain have been observed affected. Early in the growing season this disease was causing considerable loss; however, at present continuous dry weather has prevented its further development and spread. Anthracnose (Elsinoë ampelina) was observed in 2 vineyards, in Hempstead and Lee Counties. Very little reduction in yield had resulted at the time of this survey (Howard W. Larsh).

In northeastern and north-central IOWA, both cultivated and wild grapes were attacked by Black Rot (Edgar F. Vestal, period ending July 8).

DISEASES OBSERVED ON CANE FRUITS: Orange Rust (Gymnoconia interstitialis) [G. peckiana] occurred on most of the middle and lower leaves of native dewberry plants observed in MARYLAND, in waste land on the Eastern Shore near Fruitland and south of Salisbury. It was affecting about 3% of the crop in one raspberry field near Clear Springs in western Maryland. In western Maryland raspberry Mosaic (virus) in a mild form was affecting about 5% of the plants in a small planting near Clear Springs. Raspberries in the Smithsburg-Beaver Creek area were slightly affected. Some of the plantings in the mountain areas are being neglected and are becoming a menace as a source of virus and other diseases for nearby patches (E. A. Walker, May 8 - 13).

Most of the raspberry patches observed in northeastern IOWA showed neglect, many dead canes being found among the bearing ones. Anthracnose [Elsinoë veneta] was present as a trace on most canes (Edgar F. Vestal, June 8).

Leaf Spots were prevalent on blackberry and raspberry on the University of MISSOURI Horticultural Farm. These were identified by Mr. D. A. Preston of the Emergency Plant Disease Prevention Project laboratory as caused by Septoria rubi West on blackberry and the Septoria stage of Sphaerulina rubi Demaree & Wilcox on raspberry (T. W. Bretz, July 3 - 15).

Raspberry Mosaic was found in a few plantings visited in the truck crop district in Jefferson County, COLORADO, with Mr. J. L. Forsberg of the Experiment Station. One 1-acre planting was 100% infected (E. W. Bodine, week ending July 8).

DISEASES OF CURRANT AND GOOSEBERRY: Leaf Spot (Cercospora angulata) was responsible for much spotting of the foliage of currants on the University of MISSOURI Horticultural Farm near Columbia (T. W. Bretz, July 3-15). Anthracnose (Pseudopeziza ribis) was causing 50% or more loss on currants observed in Grays Harbor County in western WASHINGTON, June 21. The fruit was well covered with fruiting bodies of the fungus. No control had been attempted. Anthracnose was also very prevalent on gooseberries in this location. It was noticeable that Powdery Mildew [Sphaerotheca mors-uvae] was not prevalent (Lytton W. Boyle).

REPORTS ON STRAWBERRY DISEASES: During early March, with Dr. W. F. Jeffers, strawberry plantings were inspected for Red Stele (Phytophthora fragariae) in Wicomico and Somerset Counties on the MARYLAND Eastern Shore. Strawberry plants were scarce, and owing to the drought of the preceding season, only those in low wet areas appeared to make a good growth while those on higher ground failed to set plants. Red stele was practically absent on higher ground, but very prevalent in the lower areas, which made strawberry plant inspection very difficult. Many fields were rejected by

the inspectors because of red stele. The varieties Chesapeake, Blakemore, Missionary, Premier, Catskill, and Dorsett were very susceptible, while Aberdeen and Pathfinder were highly resistant, and the Temple variety was free from the disease. Strawberry plants in NEW JERSEY appeared to be free from red stele.

During the second week in May, Blakemore Yellows (genetic) was pronounced in a small planting near Salisbury on the Eastern Shore, and near Selbysville, DELAWARE (E. W. Walker).

Approximately 75 acres were surveyed in ARKANSAS. Leaf Spot (Mycosphaerella fragariae) occurred on Blakemore and Klondike in Benton, Crawford, and White Counties. In a small planting near Alma (Crawford County) the leaf surface was reduced nearly 40%. This disease has reached the stage, in several plantings in the State that warrants spraying for control. Scorch (Diplocarpon earliana) was also present in most of the plantings with leaf spot. Near Rogers (Benton County) scorch reduced the leaf area of the variety Klondike 30%. Similar losses were observed in several plantings in White County (Howard W. Larsh, June 20 - July 10).

LATE BLIGHT AND OTHER DISEASES REPORTED ON POTATO

REPORTS ON LATE BLIGHT: According to M. F. Barrus, late blight (Phytophthora infestans) is well established in up-state NEW YORK. He states that "It has now been found in potato fields in 12-up-state counties. In the order in which reports were received, these are Tompkins, Steuben, Oneida, Cayuga, Cattaraugus, Monroe, Orleans, Genesee, Wyoming, Allegany, Madison, and Livingston. In some of these fields, the damage has already been rather extensive. There can be little doubt that the disease is present unrecognized in many other fields throughout the State. The dry and relatively hot weather that has prevailed during the past month should not be permitted to lull us into a state of complacency. Blight is firmly established and, although not able to advance much recently, it will make rapid progress once the weather becomes favorable for it unless fields are well protected." (Weekly News Letter, July 17).

Late blight is not a problem on Long Island at present, according to reports from that section in the Weekly News Letter.

In a report quoted by I. E. Melhus, C. J. Eide states that "Late blight was found to have spread slowly in the field near East Grand Forks, MINNESOTA, where one infected leaf was found the previous week. Light infection was also observed in a field near Crookston. These observations were made on July 18. Several other fields in the vicinity were examined, as well as fields between Crookston and Grand Rapids, and Grand Rapids and St. Paul, but no blight was observed."

Inspection of numerous fields in northeastern OHIO (July 10-15) showed no late blight, according to M. R. Harris. Many fields there had not been sprayed because of the lack of rainy periods.

POTATO DISEASES IN NEW ENGLAND: Potato fields were examined in North Haven, Windsor, and Broad Brook, CONNECTICUT (July 10-12). Blackleg (Erwinia atroseptica) [E. phytophthora] was found in 4 fields in North Haven and Broad Brook but averaged less than 1% in all cases. Leaf Roll (virus) could be found in most fields and where present ranged from a trace to 5 or

6% infection. Early Blight (Alternaria solani) is now gaining headway but only traces could be found here and there. Tipburn (cause questionable) is present in slight amounts in most fields.

In RHODE ISLAND a general survey of potatoes was made (July 13-15) in the company of Mr. Rich and Dr. Locke in Charlestown, Kingston, Slocum, Newport, Portsmouth, Tiverton, and Little Compton. Blackleg was found in 14 fields. Usually only a trace to 1% was present; the greatest amount found being about 3% in a field of Cobblers in Charlestown. Early Blight was present in all fields; but infection was generally light. Probably the worst field had about 60% prevalence with severity light to moderate. Leaf Roll was present in 11 fields, usually about 2 or 3%, but in one field of Chippewas the average was 5% and in another about 10%. Purple Top (Aster-Yellows Virus) was found in 7 fields, in amounts from a trace to less than 1%. Mosaic (Virus) was found as a trace in 8 fields. Tipburn was present in all fields but is not particularly serious at present.

The drought affecting southern New England is cutting the yield of early potatoes seriously, especially in Newport, Portsmouth, Tivertown, and Little Compton. In these areas most of the Cobblers have ceased growing and in a few places digging is in progress with a yield of a quarter to half of what it should be. -- Robert C. Cassell, Emergency Plant Disease Prevention Project.

DROUGHT INJURY AND DISEASES IN NEW YORK: George Gyrisko, reporting from the North Fork of Suffolk County on Long Island, describes conditions similar to those reported by Cassell from southern New England. He states that "Many Cobbler fields have succumbed to the hot weather and are prematurely down. Some growers have already begun to dig Cobblers and yields of 120 to 130 bushels per acre are not uncommon. Many fields of Green Mountain have also suffered, especially on light ground. The lower leaves have yellowed and some plant have been entirely killed." He reports that Fusarium Wilt, undoubtedly from infected seed, was noted in a number of places, and that Early Blight is common in many fields but lack of moisture has prevented spread.

Leaf Roll is frequent in fields of Chippewa, Bliss, and Mohawk in Allegany County, according to V. C. Stevenson. -- Weekly News Letter, July 17.

DISEASES IN ARKANSAS: Approximately 1800 acres were surveyed. Blackleg was severe in several plantings this season. Cool, wet weather prevailed throughout the early growing season presenting conditions conducive for its development. In some instances growers planted their seed potatoes while the soil was too wet. The most severely infected planting was observed near Crossett (Ashley County), where a loss of 25% of the plants in a 2-acre planting occurred.

Early Blight (Alternaria solani) was present in every field of potatoes surveyed. The amount of damage varied from a trace to severe defoliation and killing of the leaflets in the most severely infected plantings. Many of the potato fields in Crawford and Sebastian Counties had marked reductions in yields, as a result of early blight.

Black Scurf (Rhizoctonia solani) was observed in several plantings in White, Ashley, and Hempstead Counties, in most of the fields limited to a small number of plants. A loss of nearly 15% was observed near Searcy (White County) in a 2-acre planting. Many of the plants in this field were girdled by black scurf.

Southern Blight (Sclerotium rolfsii) killed nearly 25% of the plants in a 2-acre planting near Alma (Crawford County). Southern blight was fairly widespread in Crawford, Franklin, Sebastian, and Hempstead Counties.

Mild Mosaic was observed in several plantings throughout the State. In most instances infection was limited to only a few plants in a field, but in a 5-acre planting near Mena (Polk County) at least 25% of the plants were infected.

Rugose Mosaic occurred in several plantings. An infection of nearly 10% was observed in a small planting near Marianna (Lee County).

Leaf Roll was the most widespread and destructive of all of the potato virus diseases observed. The infection varied from a trace to nearly 15%. In several plantings in Crawford, Franklin and Sebastian Counties a loss of over 5% of the plants was observed. -- Howard W. Larsh, Emergency Plant Disease Prevention Project. June 20-July 10.

VIRUS DISEASES IN OHIO: There was a slight amount of drought injury in some fields in the potato-growing sections of Stark, Wayne, and Summit Counties. Where certified seed was used, only a trace of Leaf Roll was found. Where uncertified seed was used, Leaf Roll affected as high as 40% of the plants and a trace of Spindle Tuber was seen in a few places. -- M. R. Harris, Emergency Plant Disease Prevention Project. July 10 - 15.

MOSAIC IN SOUTHWESTERN IDAHO AND EASTERN OREGON: Mosaic was fairly common, but most fields examined showed only traces of the severe type. -- Earle C. Blodgett, Emergency Plant Disease Prevention Project. June 19-24.

DISEASES REPORTED ON TOMATO, EGGPLANT, AND PEPPER

Reports are of Emergency Plant Disease Prevention Project surveys.

TOMATO DISEASES IN RHODE ISLAND: Early Blight (Alternaria solani) was found as a trace in Newport. Leaf Mold (Cladosporium fulvum) was reported by H. L. Keil to be present in moderate proportions in a nursery planting in Newport. -- Robert C. Cassell, July 13-15.

TOMATO DISEASES IN NORTHERN ALABAMA: Tomatoes are the most important truck crop in the Blount County vegetable-growing area. However, the greater part of the crop is grown late for the fall market and plants for this crop are now being set. A few early commercial plantings were observed. Blossom-End Rot (Physiogenic) was causing heavy losses. Only traces of Early Blight were found. One field was found where Bacterial Wilt [Pseudomonas solanacearum] had killed about 15% of the plants. All plantings examined were suffering from lack of moisture. -- G. H. Stone, July 3 - 15.

TOMATO DISEASES IN NORTHEAST TEXAS: I have just completed a survey trip through the tomato-growing area of Northeast Texas accompanied by Dr. P.A. Young of the Jacksonville Tomato Disease Laboratory. The area covered included portions of Cherokee, Rusk, Harrison, Marion, Cass, Bowie, Red River, Lamar, Delta, Hunt, Rains, Wood, and Smith Counties of Texas.

Generally, the entire area obtained abundant rainfall early in the year, but now suffers from lack of rain, most points visited reporting no rain in

the past 6 or 7 weeks. As a result of lack of rain at this time, there was considerable culling of tomato fruits due to "puff" or "pops" and blossom-end rot, and what might be termed "drought leaf roll". In this area there were none of the bacterial diseases which were evident in all East Texas areas earlier in the season, as previously reported. Dr. P. A. Young estimates that as much as 25% of the green-wrap fruits offered the latter part of the season at Jacksonville were culled because of "puff".

Due to the general acceptance of resistant varieties by the growers, only occasional plants were encountered showing symptoms of Fusarium Wilt [F. oxysporum f. lycopersici]. Southern Blight (Sclerotium rolfsii) was active in many fields, infection averaging not less than 1% of the tomato plants in the Northeast Texas area. Early Blight was prevalent in all fields, causing fruit spots as well as stem cankers and leaf spots. This disease is responsible for defoliation, resulting in sunburn of the fruits. Occasional plants were found showing infection by Heterodera marioni, the Rootknot Nematode. Leaf Roll, caused by severe drought conditions, was common throughout the northeast Texas area, and was particularly severe in Bowie and Cass Counties. -- George E. Altstatt, July 14.

TOMATO DISEASES IN OKLAHOMA: Approximately 125 acres were surveyed. Septoria Leaf Spot (S. lycopersici) was very abundant early in the growing season. Severe yellowing and slight defoliation resulted. In a small planting, 3 acres, near Pawhuska (Osage County) 2% of the plants were almost completely defoliated. Early Blight occurred in several of the plantings early in the season. Continued rains and cool weather aided in the development. Recently the spread of both Early Blight and Leaf Spot has been arrested due to dry, hot weather. A reduction in leaf area in a large planting near Pawhuska was observed. Mosaic (Virus) infected plants were present in every planting surveyed. In most instances the infection was limited to a small number of plants. A single plant was observed at Stillwater (Payne County) having typical symptoms of Curly Top (Virus). -- Howard W. Larsh, June 7 - 20.

TOMATO DISEASES IN ARKANSAS: Approximately 125 acres were surveyed. Septoria Leaf Spot was widespread during the early growing season. Weather conditions were such that it developed rapidly and spread without difficulty. Many of the young plantings in northwest Arkansas showed yellowing of theleaves and in many instances slight to moderate defoliation due to leaf spot. Early Blight occurred in several of the plantings surveyed early in the growing season. In one field, 6 miles east of Springdale (Washington County), the lower leaves of most of the plants had been killed. The plants as a whole were yellow and had been retarded in their growth by these infections. Similar infections were observed near Hope (Hempstead County); however, very little defoliation had resulted during the time of this survey. Fusarium Wilt was observed in a small planting in Hempstead County. Nearly every planting surveyed had a few plants infected with Mosaic. In one field near Alma (Crawford County) 43 plants were infected out of 200 counted. -- Howard W. Larsh, June 20 - July 10.

TOMATO DISEASES IN MINNESOTA: Between July 6 and July 11, part of the vegetable-growing area in Ramsey, Hennepin, and Anoka Counties was inspected. The writer was accompanied by R. C. Rose, Extension Plant Pathologist, University of Minnesota.

Little Septroia Blight has developed in the Twin Cities region. One field was infected heavily with Bacterial Spot (Bacterium vesicatorium) [Xanthomonas vesicatoria], 100% of the fruits being attacked with about 10% of the fruits severely damaged. In this field traces of Blossom-End Rot and Mosaic also occurred.

In one large greenhouse, very heavy infection of Leaf Mold was found. A trace of Septoria Blight was seen, while old lesions of Early Blight were present. Byckeye rot (Phytophthora sp.) was reported by R. C. Rose to have occurred earlier in this greenhouse. -- Ian W. Tervet.

TOMATO WILT IN MISSOURI: The variety test plots of Dr. C. H. Tucker, located on the University of Missouri Horticultural Farm a few miles west of Columbia were visited with Dr. Tucker. No fruit or foliage diseases were observed. Fusarium Wilt was in evidence in the various commercial varieties and certain hybrid lines developed by Dr. Tucker which are not homozygous for wilt resistance. Local weather conditions have been very favorable for the development of wilt and extensive killing has occurred in the most susceptible types. -- T. W. Bretz, July 3-15.

TOMATO DISEASES IN COLORADO: In company with Mr. J. L. Forsberg of the Colorado Experiment Station, a survey was made in the greenhouses in the Denver area and in the truck crop district in Jefferson County. Leaf Mold was 100% prevalent on greenhouse tomatoes, but infection was late and damage slight. A few plants affected by Fusarium Wilt were found in greenhouses.

Psyllid Yellows was prevalent in Jefferson County.

A few plants affected by Spotted Wilt (Virus) were found in Victory Gardens in Larimer County, and Bacterial Canker (Phytomonas michiganensis) [Corynebacterium michiganense] was also found on a few plants in Larimer County. -- E. M. Bodine, week ending July 8.

LEAF MOLD IN A WASHINGTON GREENHOUSE: A large greenhouse planting on Bainbridge Island, Kitsap County, was well covered with Leaf Mold. Growth of the plants had been vigorous and was too dense to allow sufficient ventilation. The crop will be practically complete loss. -- Lytton M. Boyle, June 23.

TOMATO DISEASES IN CENTRAL CALIFORNIA: From July 1 to 15, plantings were inspected in the Salinas Valley and surrounding areas, and in Santa Cruz County.

Curly Top was slight in most districts visited. One field in the vicinity of Greenfield showed approximately 5% infection. Only a trace of the disease was seen in the Watsonville district of Santa Cruz County.

Traces of Spotted Wilt were found in the Watsonville district. None was found at this time in the Salinas Valley.

Tomato Mosaic (Virus) was slight to moderate in all districts visited.

Bacterial Canker (Phytomonas michiganensis) was found in 4 widely separated fields. One field of 40 acres in the Greenfield district showed scattered infected plants, estimated at less than 1%. A few infected plants were found in a small field of about 4 acres near San Juan. In one field of approximately 30 acres near Gilroy more than 10% of the plants were infected with canker. A 30-acre field east of Watsonville showed a 15% infection with canker. Seed sources for these fields have not yet been traced. -- Horace L. Barnett.

BACTERIAL WILT OF EGGPLANT IN SOUTHERN LOUISIANA: Bacterial Wilt (Bacterium [Pseudomonas] solanacearum) accounted for a small percentage of loss in a Victory garden in the vicinity of Baton Rouge. This disease was not found in the large trucking areas around New Orleans last week. -- Douglas C. Bain. July 3-8.

DISEASES OF BELL PEPPER IN NORTHEAST TEXAS: In one field in Cherokee County 20% of the pepper plants had succumbed to Sclerotium rolfsii. It was noted that many of the roots of plants dead for several days appeared to show signs of possible secondary invasion by Sclerotium bataticola. Specimens have been sent to Stillwater for examination. These pepper plants also showed a trace of Cercospora leaf spot (C. capsici). -- George E. Altstatt, July 14.

OTHER REPORTS ON DISEASES OF VEGETABLE CROPS

Except where indicated otherwise, reports are of Emergency Plant Disease Prevention Project surveys.

DISEASES OF BEANS IN NEW ENGLAND: Halo Blight (Pseudomonas medicaginis var. phascolicola) was affecting about 70% of the snap bean plants in a small garden in North Haven, CONNECTICUT. Severity was light. Halo Blight was found in epidemic proportions on French Horticultural Shell bean in Newport and Portsmouth, RHODE ISLAND. In this area a specialty is made of this variety because of the fine color imparted to the bean. Seed was purchased this year as usual from reliable seed concerns, yet apparently most fields have such heavy infections of Halo Blight that defoliation is in progress and it is expected that yields will be cut by at least half.

On bush snap beans a trace of Mosaic (virus) was found in [illegible]ug and Portsmouth, and Halo Blight was found in Newport, ranging in prevalence from a trace to 5% and light in severity. -- Robert C. Cassell, July 10-15.

BEAN DISEASES IN EASTERN TENNESSEE: The expected acreage of beans in Johnson County this year is about the same as that of last year, about 6000 acres. An additional 1500 acres, or less, will be planted in the surrounding areas. The fall acreage planted will be less than planned if the drought persists much longer. The yield and quality of the early crop has been reduced by the dry weather. In the early crop a 5 to 8% loss from Anthracnose, Colletotrichum lindemuthianum, occurred. The origin of most of the seed is unknown. About 15% of it is known to be western seed. Root and Stem Rot, predominantly Rhizoctonia solani, is becoming serious. Fields with 60 to 90% of the plants affected are not uncommon. A number of fields were checked where the farmers hoped only to make expenses. They blamed the poor yields on the drought, whereas root rot was largely responsible. They want a cash crop and often beans follow beans with little rotation. Common Bacterial Blight, Xanthomonas phaseoli, was frequently seen but in small amounts and was causing little damage. Mosaic was scattered and rather abundant in a few fields. -- R. A. Hyre, July 10 - 14.

DISEASES ON GREEN BEANS IN NORTHERN ALABAMA: From 1500 to 2000 acres of pole green beans (Kentucky Wonder) are grown in Blount County. No serious disease outbreaks were encountered. Southern Blight (Sclerotium rolfsii) was found to have killed occasional plants in most fields. Occasional mosaic plants were also observed. -- G. M. Stone, July 3 - 15.

BEAN DISEASES IN NORTHEAST TEXAS: The Common Bacterial Blight was seen on pole beans on the U.S.D.A. Cotton Field Station at Greenville in Hunt County. Ashy Stem Blight (Macrophomina phaseoli) was severe on Pinto bean plants grown at the Tomato Disease Laboratory at Jacksonville. -- George E. Altstatt, July 14.

BEAN DISEASES IN OKLAHOMA: Approximately 250 acres were surveyed. Anthracnose was present in 2 plantings near Spiro (LeFlore County). A loss of approximately 2% of the beans in a 20-acre planting was observed. Common Bacterial Blight was observed in one field near Heavener (LeFlore County). The loss was negligible as most of these beans were being canned. Only a few plants were observed killed by Root Rot (Rhizoctonia solani). A loss of nearly 1% was observed near Poteau (LeFlore County). -- Howard W. Larsh. June 7 - 20.

DISEASES OF BEAN IN ARKANSAS: Approximately 850 acres were surveyed. Common Bacterial Blight was observed causing considerable loss in plantings in Benton, Washington, Crawford and Franklin Counties. In a large planting near Lowell (Benton County) nearly 60% to 80% of the plants were infected. Pod infection in this same field was estimated between 5 and 10%.

Anthracnose specimens were collected by Dr. J. R. Shay near Fayetteville (Washington County). Leaf and stem infections occurred; however, pod infection was not present due to dry weather which has prevailed since pods were set. This disease was very severe during last year but with the exception of the infection observed by Dr. Shay, Anthracnose was not present in any of the plantings observed during the current growing season.

Southern Blight was observed destroying beans in the seedling stage at Hope (Hempstead County), which resulted in a reduction of 20% of the stand. In a large planting in Franklin County a loss of over 10% was observed on more mature plants. A similar loss was observed in a planting on the Rice Branch Experiment Station, Stuttgart (Arkansas County).

Rhizoctonia Stem Canker (Rhizoctonia solani) reduced the stand in one 5-acre planting near Mulberry (Crawford County) nearly 2%. The disease was also observed causing a reduction in stand in a small planting in Hempstead County.

Very few, if any, plantings are free from Mosaic; infections vary from a trace to nearly 85%. Mosaic has become severe enough in Arkansas to warrant careful selection of the seed, with hope of purchasing seed that has been grown in mosaic-free areas. -- Howard W. Larsh, June 20 - July 10.

BEAN DISEASES IN MINNESOTA: Heavy leaf injury caused by leafhoppers occurred in many plantings in the vegetable-growing area in Ramsey, Hennepin, and Anoka Counties, visited with Dr. R. C. Rose between July 6 and July 11. Common Bacterial Blight also was causing some leaf injury. In one field, death of at least half of the plants had resulted due to Rhizoctonia Root Rot. -- Ian W. Tervet.

DISEASES REPORTED ON LIMA BEAN: Halo Blight was found in North Haven, CONNECTICUT; prevalence was about 50% and severity moderate. Mosaic was found in Southington where the prevalence was 10% and severity heavy, and also in North Haven where the prevalence was about 2% and the severity light (Robert C. Cassell, July 10-12).

In northeastern TEXAS, Bacterial Leaf Blight and Pod Blight (Bacterium [Xanthomonas] phaseoli) was severe on Lima beans in Rusk County. The disease was also seen on Lima beans on the U.S.D.A. Cotton Field Station at Greenville in Hunt County, (George E. Altstatt, July 14).

DISEASES OBSERVED ON BEETS IN WESTERN WASHINGTON: In Clallam County, June 22, several comments were made regarding loss of stand due to Damping-off in small garden plantings of beets. Examination of roots showed evidence of a Phycomycete and of Rhizoctonia. In gardens examined the loss might average 50% of the stand.

Downy Mildew (Peronospora schachtii) was prevalent on the seed crop but as yet had caused no significant loss. It appears as if many seed lots were heterogeneous in respect to resistance to this disease. Susceptible plants were distinctly in the minority.

A blight of the tips of upper leaves and the flowers of stalks was noted on a few plants. Microscopic examination did not give evidence of fungi or bacteria associated. No severe cases were evident and blighted flowers were limited to parts of the stalks. -- Lytton W. Boyle.

DISEASES REPORTED ON CARROTS: In Massachusetts, Leaf Blight (Cercospora carotae) was found in 6 fields in Whately, Hadley, and Sunderland. Prevalence ranged from a trace to 90% and severity from slight to moderately severe. Yellows caused by the Aster-Yellows Virus was found in traces only in several fields in the 3 places. The May Drought caused many stands of carrots in the Connecticut River Valley to be spotty. Some cases are reported where the fields were plowed up because of the poor stand (R. C. Cassell, July 6-8).

In a muck area in northern Stark County, OHIO, older leaves of carrots showed Leaf Blight caused by Macrosporium [Alternaria] carotae. Younger leaves growing during the dry weather of the past month were free from disease (H. R. Harris, July 10 - 15.)

In all commercial fields inspected in the vegetable-growing area of Ramsey, Hennepin, and Anoka Counties, MINNESOTA, with R. C. Rose, from 1 to 5% of the plants were infected already with Yellows, presumably due to infection by the Aster-Yellows Virus. Infection on the carrots probably spread from fleabane, Erigeron canadensis, and Canada thistle, Cirsium arvense, both weeds apparently being infected with this virus (Ian M. Tervet, July 6 - 11).

Examination of many carrot seed fields in southwestern IDAHO and eastern OREGON showed wide variation in stand of roots, from about 25% to 90%. In general, Aster Yellows ranged from none to 15% and in some local areas up to nearly 25%. The loss in stand is due in considerable measure to Root Rots, of which Black Rot [Stemphylium radicinum] appears to be the most prevalent. Bacterial Blight [Xanthomonas carotae] was noted in several fields (Earle C. Blodgett, June 19 - 24).

In CALIFORNIA, carrots in the Salinas Valley and surrounding areas and in Santa Cruz County were apparently free from any above-ground diseases. In the Soledad district in Monterey County there was a comparatively heavy

infection of Bacterial Blight or Scab on the roots. This was not at all surprising, since considerable infection had been noted on the young carrots earlier in the season. Many of the culls are being left in the field for some time but apparently are being collected later and used for stock feed (Horace L. Barnett, July 1-15).

REPORTS ON DISEASES OF CRUCIFEROUS CROPS: In CONNECTICUT, Club Root (Plasmodiophora brassicae) was found in serious proportions in a half-acre Cabbage field in Southington. Loss will amount to about 75% of the plants. Club Root was also found in a 3/4-acre field in North Haven, where about 20% of the plants seemed to be affected and apparently 5% of the plants would fail to head (R. C. Cassell, July 10-12).

In NEW YORK, Yellows [Fusarium oxysporum f. conglutinans] is now showing up in some Cabbage fields in Monroe County, and several new infestations have already been found (R. G. Palmer).

Not more than 50% of the crop in a half-acre Cabbage field just beginning to head in Saratoga County, will be harvested because of Club Root and maggot injury. The field was planted on a site used for the family garden (D. C. Deuel).

For Club Root control in Cauliflower, one grower in Erie County used 3 oz. of corrosive sublimate in 50 gal. of water, using 350 to 500 gal. per acre at setting time. He reported rather serious setback and some temporary stunting of the plants. However, considerable control of the disease resulted and a much better crop was cut on the treated plants. Maturity was delayed somewhat and the grower believes that calomel might better be tried for Club Root control in the future. Another grower tried calomel but used only 2-1/2 lbs. per acre; this use of calomel at half the recommended rate resulted in only partial control. There was considerable indication that the gum arabic was only partially effective in holding the calomel in suspension. Control was spotted in the field (L. E. Curtis). Club Root is beginning to limit the growth of cauliflower on muck soil in Niagara County; however, plants seem to mature even in spite of clubbing (D. M. Dalrymple) (Reports from Weekly News Letter, July 17).

In northeastern OHIO, an area producing Cabbage seedlings on a commercial basis was examined for diseases. One lot of 350,000 seedlings of the Early Flat Dutch variety was severely damaged by Black Rot (Bacterium campestre) [Xanthomonas campestris]. About 50% of the plants were either killed or stunted. The grower made no effort to sell plants from this lot (M. R. Harris, July 10-15).

In MINNESOTA, in the vegetable-growing area in Ramsey, Hennepin, and Anoka Counties, Black Rot was found in most fields of Cabbage and was also observed in small plantings of Rutabagas, Kale, and Kohl-rabi. Club Root was causing severe loss in one field of cabbage (Ian W. Tervet, July 6-11).

An odd virus-like disease was noted on Turnip seed plants in south-western IDAHO and eastern OREGON. Rather large flat pods formed around the flower parts and in some cases the blossoms resembled leaves. These were selected, hand-planted roots, indicating perhaps late-season infection because the roots were well-shaped (Earle C. Blodgett, June 19 - 24).

In Lewis County in western WASHINGTON, traces of Ringspot (Mycosphaerella brassicicola), limited to the older leaves, were noted on Cabbage grown for seed. White Blight (Sclerotinia sclerotiorum) was noted on stalks of plants scattered throughout the planting but it was not prevalent enough to cause any significant reduction in yield (Lytton W. Boyle, June 19).

DISEASES REPORTED ON CUCURBITS: Bacterial Wilt (Erwinia tracheiphila) was found as a trace in one Cucumber field in Whately and one in Sunderland, MASSACHUSETTS (R. C. Cassell, July 6-8).

In NEW YORK, Bacterial Wilt is appearing on Melons in Monroe County (R.G. Palmer) and on Cucumbers in Niagara County (D. M. Dalrymple) (Reports from Weekly News Letter, July 17).

In the Blount County vegetable-growing area in Northern ALABAMA, several hundred acres each of Cucumber and Cantaloup were examined. Bacterial wilt was found to be a serious problem in the area. Few plantings were observed where it was not present and in several fields as high as 40% of the plants were dead or badly stunted. Rootknot [Heterodera marioni] was also prevalent in many fields. Squash plants in all of the several commercial plantings examined were so heavily infested with the squash bug that disease observations were nearly impossible. Rootknot had caused considerable damage in one field (G. M. Stone, July 3-15).

In northern LOUISIANA a small percentage of the plants in one Cantaloup field were affected by Anthracnose (Colletotrichum lagenarium). On Watermelons in the Ruston-Calhoun area, Fusarium Wilt (F. [oxysporum f.] niveum) was not at all uncommon. In some of the small patches, as many as 25% of the plants were infected (Douglas C. Bain, July 10-15).

Approximately 125 acres of Cucumbers were inspected in ARKANSAS. Downy Mildew (Pseudoperonospora cubensis) was observed in several plantings in Polk, Sevier, Howard, and Hempstead Counties; in all cases incidence was no greater than 5%. The most severely infected patch observed was near Nashville in Howard County, with an estimated infection of 5%. Leaf Blight (Macrosporium cucumerinum) [Alternaria cucumerina] occurred in 2 plantings in Howard and Hempstead Counties. Downy Mildew was not present in these fields and Leaf Blight was limited to only a few plants. Bacterial Wilt was observed in a 1-acre planting near Mena in Polk County; 5 plants had been killed and 4 others were beginning to show signs of wilting. The vector, 12-spotted cucumber beetle, was present in large numbers (Howard W. Larsh, June 20-July 10).

In the vegetable-growing area of Ramsey, Hennepin, and Anoka Counties, MINNESOTA, heavy infection of Angular Leaf Spot (Bacterium [Pseudomonas] lachrymans) was found in the only Cucumber field examined, in Hennepin County. Fusarium Wilt and Bacterial Wilt were found in 2 fields of Cantaloup but loss thus far was slight. However, a Root Rot (causal organism not yet determined) had caused about 20% reduction in stand in one field (Ian W. Tervet, July 6-11).

In IOWA, with Dr. I. E. Melhus, a survey of the Muscatine-Conesville area was made June 30-July 1. Watermelons were setting fruit, and in general look well. Fusarium Wilt was present as a trace as was also Anthracnose. In one Cantaloup field, Bacterial Wilt was found damaging some 10% of the vines (Edgar F. Vestal).

ROOT ROT OF DANDELION IN NEW JERSEY: One 4-acre field of Italian dandelion in the Vineland sections was about 1% affected by a Root Rot from which a Fusarium sp. was isolated (April 27) -- E. A. Walker.

REPORTS ON LETTUCE DISEASES: A serious case of Sun Scald (nonparasitic) was found in Southington, CONNECTICUT; about a third of the plants in a 3/4-acre field were lost (Robert C. Cassell, July 10-12).

In Erie County, NEW YORK, following the trouble that many lettuce growers experienced with seedlings in the greenhouse, many have had rather serious losses in the field. The exact cause has not been definitely settled but it is believed that Bottom Rot caused by Rhizoctonia [solani] may be causing a large part of the loss, with possibly Drop (Sclerotinia) also contributing. On one farm lettuce Yellows [Aster-Yellows Virus] caused some little loss even on the early crop (L. E. Curtis, Weekly News Letter, July 17).

Downy Mildew (Bremia lactucae) was prevalent in several fields in the truck crop district in Jefferson County, COLORADO (E. W. Bodine, Week ending July 8).

In central CALIFORNIA, the later lettuce throughout the Salinas Valley, which is now ready to harvest, is relatively free from disease. Only traces of Botrytis Rot, Downy Mildew, and Sclerotinia Drop were found. However, the earlier crop, which is now nearly all harvested, was severely affected by a trouble of unknown cause that is known as "June Yellows". This trouble was commonly followed by a Slimy Rot, probably caused by various saprophytes or weak parasites.

One field of seed lettuce in the Hollister district showed a heavy infection of Downy Mildew on the leaves (Horace L. Barnett, July 1-15).

DISEASES ON OKRA IN NORTHERN ALABAMA: Okra is one of the principal truck crops in the Blount County vegetable-growing area. Fusarium Wilt (F. oxysporum f. vasinfectum] and Rootknot were found in a high percentage of the fields examined. Damage was usually slight, however, a few fields were found where Wilt was severe. -- G. M. Stone, July 3-15.

ONION DISEASES IN MASSACHUSETTS: A serious condition has developed in the "set-onion" crop of the Connecticut River Valley of Massachusetts that threatens to reduce the yield fully a quarter to a half. As determined by Dr. O. C. Boyd and the agronomists of Massachusetts State College, it is due to Fertilizer Injury to the onion roots during the drought of May and early June, followed in turn by fungous invasion of the roots. At present, the tops are breaking with the bulbs half to three-quarters formed in most cases. Pulling has been started 2 weeks prematurely in the worst-affected fields. Most of the roots of affected plants show "Pink Root" caused either by a Fusarium sp. or a Phoma sp. Occasionally plants are completely rotted by secondary bacteria.

Blast (nonparasitic) was found in set-onions in one field in Sunderland, 2 fields in Hadley, and one field in Northfield. It was also found in one field of "seed-set" onions in Sunderland. In the latter case only a trace was present but in the set-onions Blast ranged from 10% to 100% in prevalence and slight to heavy in severity. Blast will account for some additional loss to the set-onions. -- Robert C. Cassell, July 6 - 8.

ONION DOWNY MILDEW IN PACIFIC COAST STATES: Downy Mildew (Peronospora destructor) was noted in one planting in Marion County, OREGON. The grower plans to market this crop immediately as fresh onions and thus avoid serious loss. The infection became apparent during the week of June 23-30 (Lytton M. Boyle, June 29).

In the Salinas Valley of CALIFORNIA, light infections of Downy Mildew were found in several fields. In most the damage was light to negligible. A heavy infection noted in one 40-acre field near Salinas has resulted in

considerable damage to the tops in approximately 1/4 of the field. According to the grower the mildew appeared about 2 weeks ago and has developed rapidly. No doubt the progress of the disease has been favored by the cool cloudy weather which has prevailed in the Salinas Valley this summer. The actual loss would be very difficult to determine. The bulbs were slightly more than half grown (Horace L. Barnett, July 1-15).

REPORTS ON PEA DISEASES: In CONNECTICUT, Dr. J. G. Horsfall reports that 2 cases of Nonparasitic Seed Spotting have come to his attention this spring, one case in New Britain, the other in Hamden. Both were on Telephone peas and the injury seemed to be the same as described by Zaumeyer and Wade (Phytopath. 24:1393. 1934) (Robert C. Cassell).

The pea crop in the Bay section of MARYLAND and DELAWARE, and the Frederick area in western Maryland was relatively free from disease. Leaf Spot (Asochyta pisi) was observed occasionally. It was destructive to the lower leaves in several large fields near Federalsburg on the Maryland Eastern Shore, where from 60 to 80% of the plants examined showed these leaf spots. A field near Lincoln, Delaware, was similarly affected. Root Rots (Undetermined) were observed scattered over some fields. Low spots in fields sometimes showed all plants killed and bordering plants affected with Root Rot. This condition was rather frequent in the Denton-Hurlock-Federalsburg area on the Eastern Shore. Isolates of Fusarium sp. were obtained from some samples collected on higher ground (E. A. Walker, May 8-13).

In the vegetable-growing area in Ramsey, Hennepin, and Anoka Counties, MINNESOTA, visited with R. C. Rose, July 6-11, leaf and pod infection by Bacterial Blight (Bacterium [Pseudomonas] pisi) has been severe in many fields. Fusarium Wilt (Fusarium orthoceras var. pisi) [F. oxysporum f. pisi race 1] and Near-Wilt (F. oxysporum f. 8) [F. oxysporum f. pisi race 2] also have caused loss. Root Rot (Fusarium spp. and probably other fungi) was widespread and destructive (Ian W. Tervet).

At the request of a canning company at Roland, IOWA, a survey of pea fields in the vicinity of that city was made in company with Mr. E. P. Sylvester, Extension Service. One field was found in which all of the peas were dead with the pods about half mature. Questioning of the farmer disclosed that this was the third successive season for the peas on this field. Examination of the dead roots disclosed many oospores of a Pythium sp. The field was very weedy and, although the land sloped somewhat, the ground was soggy and wet at the time of the examination. It was evident that in this case there had been a building-up of inoculum in the soil from the successive years of peas in the same area and when conditions were optimum for the parasite the plants had little defense. Another field, a few miles away, on which peas had never been planted before, probably will not the farmer upwards of $100 an acre (Edgar F. Vestal, week ending July 8).

Root Rot, Near-Wilt, and Virus-like diseases in peas were noted in certain fields in southwestern IDAHO and eastern OREGON but, in general the plantings were good (Earle C. Blodgett, June 19-24).

In a field in Lewis County in western WASHINGTON (June 19), attack by a Root Rot causing dark lesions on the root and base of the stem was obvious on about 90% of the plants in various degrees of severity. The peas were nearly ready for harvest, and from a comparison of the yields of sample plants showing from a trace to severe degrees of Root Rot, it is estimated that the total reduction in yield may exceed 20%. Downy Mildew (Peronospora

viciae) [P. pisi] was evident on the leaves but at this late date will not cause any significant reduction in the crop. In Clallam County (June 22) an unhealthy condition of the root cortex was noted, but the roots were not dark in color as more commonly observed in adjoining areas (Lytton W. Boyle).

A rather severe outbreak of Mosaic (Virus) has occurred in garden plantings of peas in the vicinity of Corvallis in western Oregon. The enation type of symptom is quite common. Many comments are heard regarding the poor condition of pea plantings in small gardens. Apparently what seems to be a satisfactory control of aphids to the average grower allows survival of a sufficient population to accomplish rapid spread of Mosaic (Lytton W. Boyle, June 24).

DISEASES NOTED ON SWEETPOTATOES: In northern ALABAMA, sweetpotatoes observed in the Blount County vegetable growing area were usually free from disease. In fact the only disease found was Stem Rot or Fusarium Wilt [F. oxysporum f. batatas] and here only in 2 small fields, in one field to the extent of about 2% and in the other 5% (G. M. Stone, July 3-15).

In general, sweetpotato fields in IOWA looked well. In one field of Nancy Hall, Stem Rot caused a 75% loss of plants. Other varieties suffered a loss of some 10% from this disease. Rhizoctonia was present as a trace (Edgar F. Vestal, week ending July 8).

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE DISCONTINUES CITRUS CANKER ERADICATION

The Bureau of Entomology and Plant Quarantine has discontinued, effective June 30, 1944, the program to eradicate citrus canker which has been carried on in cooperation with certain of the citrus growing states for a number of years. Federal funds, which have been annually appropriated for this activity, were not appropriated for the fiscal year 1945. -- P. N. Annand, Chief of Bureau

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